

# SERVICE MANUAL

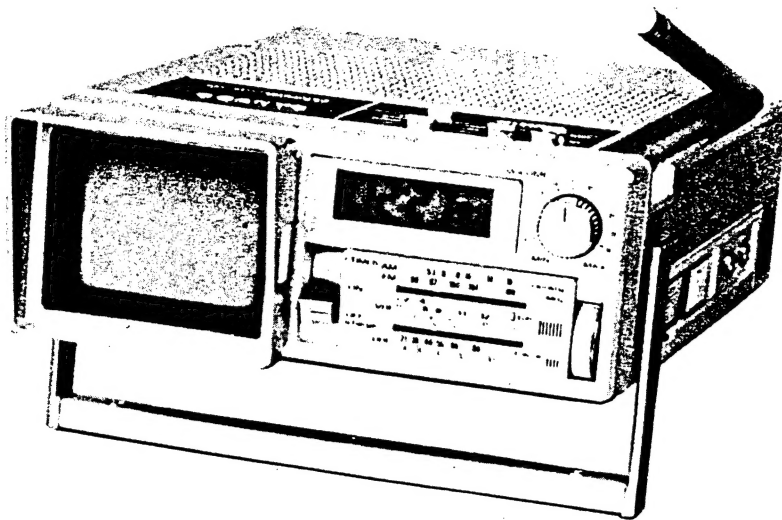
MINI B/W TELEVISION  
WITH AM/FM RADIO &  
DIGITAL ALARM CLOCK



# SANYO

## TPM 2170

(KUW)

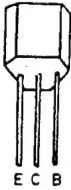
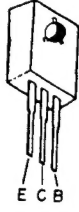
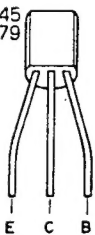
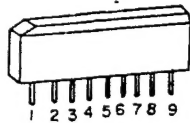
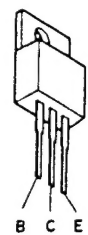

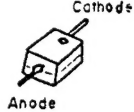
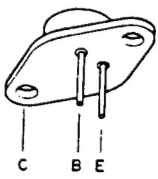

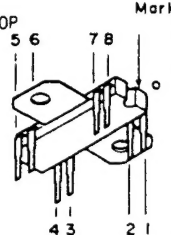

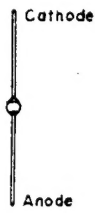
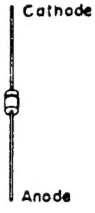
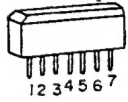
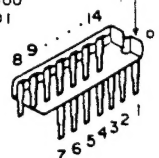

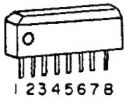
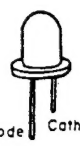
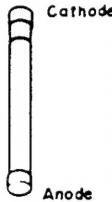
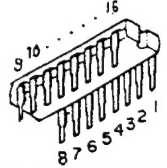


### SPECIFICATIONS

Television System	"I" "G" "B" type, 625 lines/frame, 25 frames/sec., 50 fields/sec. "M" type, 525 lines/frame, 30 frames/sec., 60 fields/sec.
Frequency Range	VHF Channels 2 - 12(EUR-system) 2 - 13(US-system) UHF Channels 21 - 69(UK, EUR-system) 14 - 83(US-system)
Antenna Input Impedance	75 ohm
Intermediate Frequency	TV: Picture 38.9 MHz Sound 32.9 MHz(UK)/33.4 MHz(EUR)/34.4 MHz(US) Radio: AM 460 KHz FM 10.7 MHz
Picture Tube	2-inch diagonal, 40 degrees deflection, C205P4 or E2225
Semiconductors	IC 5 Transistor 45 Diode 66
Loud speaker	45mm round type, 16 ohm
Sound output	150mW (10% distortion) 200mW Max
Power Source	DC 9V (AC adaptor 110-120/220-240V 50/60Hz) Rechargeable battery pack (option) DC adaptor (option)/5 "AA" cells (option)
Power Consumption	DC 2.5W
Dimensions	131mm (W) x 51mm (H) x 157mm (D) approx. (without handle)
Weight	0.8Kg approx.

NOTE: Specifications are subject to change without notice.

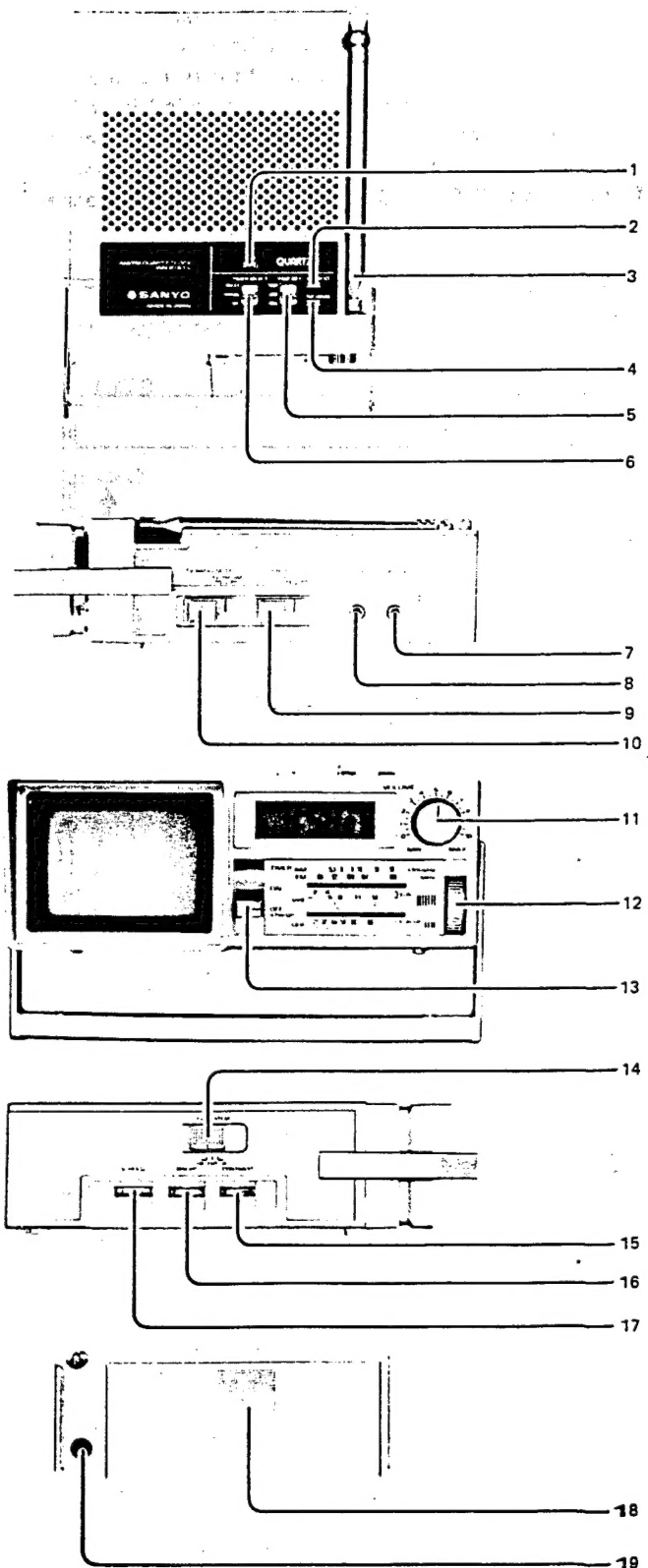
# TERMINAL VIEW

<p>2SC668</p>  <p>E C B</p>	<p>2SD612 2SD826</p>  <p>E C B</p>	<p>TO-92</p> <p>2SA608 2SD545 2SA1048 2SD879 2SB598 2SC2210 2SC2236 2SC2264 2SC2057 2SC2458 2SC2668 2SC2667 2SC536 2SC945 2SC930</p>  <p>E C B</p>	<p>LA3210 TA7137P LA4140</p>  <p>1 2 3 4 5 6 7 8 9</p>	<p>TO-220AB</p> <p>2SB511 2SC1507 2SC1520 2SC1755 2SC1756 2SD313 2SD325 2SD386 2SB507</p>  <p>B C E</p>
<p>2SC983 2SC1941</p>  <p>E C B</p>	<p>MA56</p>  <p>Cathode Anode</p>	<p>TO-3 &amp; 66</p> <p>2SB375 2SC1295 2SC1046 2SC1050 2SD575</p>  <p>C B E</p>	<p>2SC2057</p>  <p>B E C</p>	<p>LA4030P</p>  <p>5 6 7 8 4 3 2 1 Mark</p>
<p>HFSD-1C/HF-1C</p>  <p>Cathode Anode</p>	<p>1JZ61 IR5TH61 ERC27-13 W09C W03A</p>  <p>Cathode Anode</p>	<p>IS553 RD5.1EB 1S188 1S1834 1S2076 BZ-110 ERB24-02D ERB24-04D ERB24-06D RD7.5E RD11F SIB01-02 SM-1-02FR WZ-075 WZ-063</p>  <p>Cathode Anode</p>	<p>TA7140P</p>  <p>12 3 4 5 6 7</p>	<p>LA3301 HA11229 CA3065 TC4081BP Mark LA1363 LA1365 SN76666 LA1201</p>  <p>8 9 10 14 7 6 5 4 3 2 1 Mark</p>
<p>μPC574J L5630 SVC303 SVC201</p>  <p>Anode Cathode</p>	<p>LA3160</p>  <p>1 2 3 4 5 6 7 8</p>	<p>SLP-131B</p>  <p>Anode Cathode</p>	<p>EDMF-15B EDMF-20B EDMF-25B RF03E14</p>  <p>Cathode Anode</p>	<p>μPC1018C</p>  <p>9 10 15 8 7 6 5 4 3 2 1</p>

E : Emitter C : Collector B : Base S : Shield

## CONTROLS AND TERMINAL IDENTIFICATION

- 1 Light button (LIGHT)  
Push this switch to illuminate the LCD clock display.
- 2 Mode Select button (MODE SELECT)  
See Owner's Manual page 5.
- 3 Aerial  
Use this aerial to receive TV (VHF, UHF) and FM radio broadcast.
- 4 Time Advance button (TIME ADVANCE)  
See Owner's Manual page 5.
- 5 Time Set switch (TIME SET)  
See Owner's Manual page 5.
- 6 Timer Select switch (TIMER SELECT)  
Set the selector to wake up with Buzzer, Radio or TV.
- 7 External Aerial jack (EXT ANT)  
Connect the Aerial Adaptor (optional) to this jack to use an external aerial.
- 8 Earphone jack (EAR)  
For private listening, plug the earphone (supplied) into the jack.
- 9 TV Select switch (TV SELECT)  
Set this switch to desired channel band.
- 10 TV-Radio Select switch (TV-RADIO SELECT)  
Select your desired function, TV or Radio (AM or FM).
- 11 Volume control (VOLUME)  
Adjust to obtain your required output volume.
- 12 Tuning knob  
Use to tune to your desired channel or station and obtain vivid picture and clear sound.
- 13 Main switch  
Turns the power ON or OFF or to Timer function.  
When recharging the rechargeable battery pack (supplied), plug in the AC Adaptor packed with the set and turn this switch to OFF (charge) or TIMER position.
- 14 TV System switch (TV SYSTEM)  
Set this switch to desired television system.
- 15 Contrast control (CONTRAST)  
Adjust this control to obtain proper balance between black and white elements of the picture.
- 16 Brightness control (BRIGHT)  
Adjust this control to obtain desired brilliance of the picture.
- 17 Vertical Hold control (V-HOLD)  
Adjust this control to stop up or down movement of the picture.
- 18 Battery Compartment  
Remove the lid by pushing to the direction of arrow and install dry cells or rechargeable battery pack.
- 19 External Power jack (DC IN 9V)  
To use the set on AC 110-120/220-240-volt or external DC 12-volt, plug the AC Adaptor or Car Battery Cord Model MDC-53B (optional) into this jack.



## MECHANICAL DISASSEMBLIES

### CABINET TOP REMOVAL

1. Place the TV set upside down on a soft surface.
2. Remove three screws as indicated in Figure 1..
3. Open the battery compartment lid of the rear of the TV set by sliding it in the direction as indicated in Figure 2.
4. Push the two hooks in the direction of the arrow as indicated in Figure 3, and lift the Cabinet Top away from TV set. (NOTE: Be careful of the Rod Antenna and Handle, when you lift the Cabinet Top).

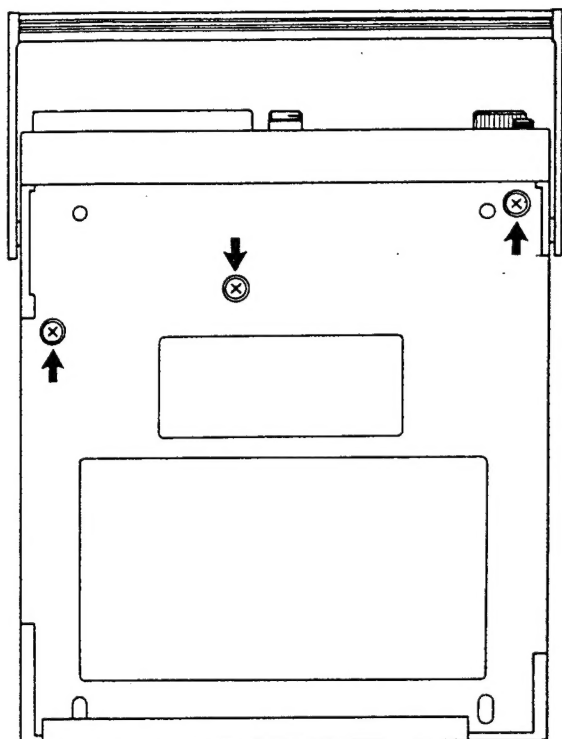


Figure 1

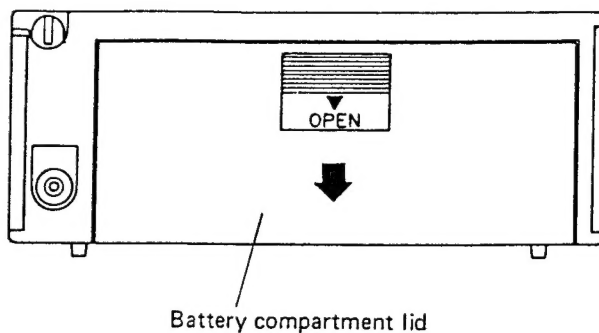


Figure 2

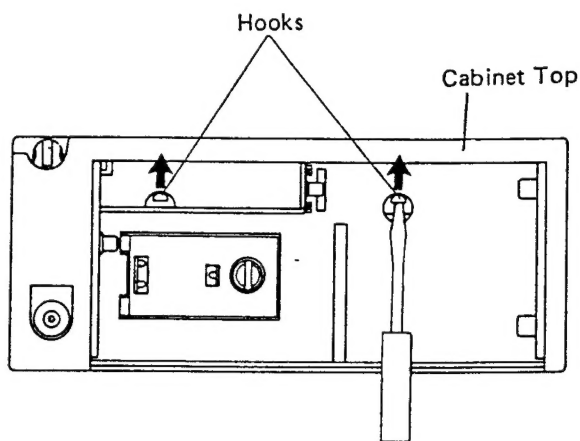


Figure 3

### RADIO P.C.B. REMOVAL

1. Remove Cabinet Top (Refer to CABINET TOP REMOVAL).
2. Take out two knobs (TV-RADIO SELECT, TV SELECT).
3. Remove three screws as indicated in Figure 4.
4. Pull out the Side Panel in the direction (A) as indicated in Figure 4.
5. Pull out the Cabinet Front in the direction (B) as indicated in Figure 4.
6. Take out the 3P socket from the TV P.C.B. as indicated in Figure 5.
7. Lift the Radio P.C.B. and Cabinet Front in the direction of the arrow as indicated in Figure 5.  
(NOTE: Keep the leads P4(Green), P5(Black) and Volume(Gray) as far as possible from the SF101, when assembling after servicing so that the leads does not pick up any oscillation).

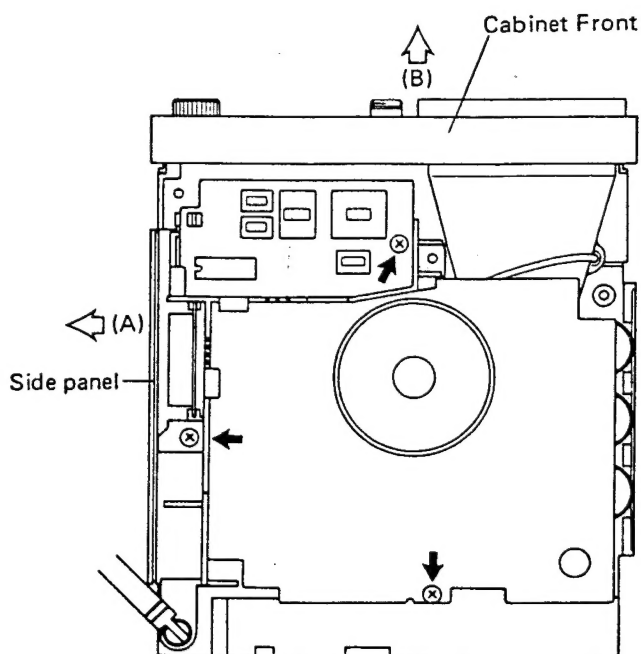


Figure 4

### TV P.C.B. REMOVAL

1. Remove the Cabinet Top and Radio P.C.B. by following the instructions for them.
2. Slightly pull the TV P.C.B. in the direction (A) and lift it in the direction (B) of the arrow as indicated in Figure 5. Then, the TV P.C.B. will be removed.

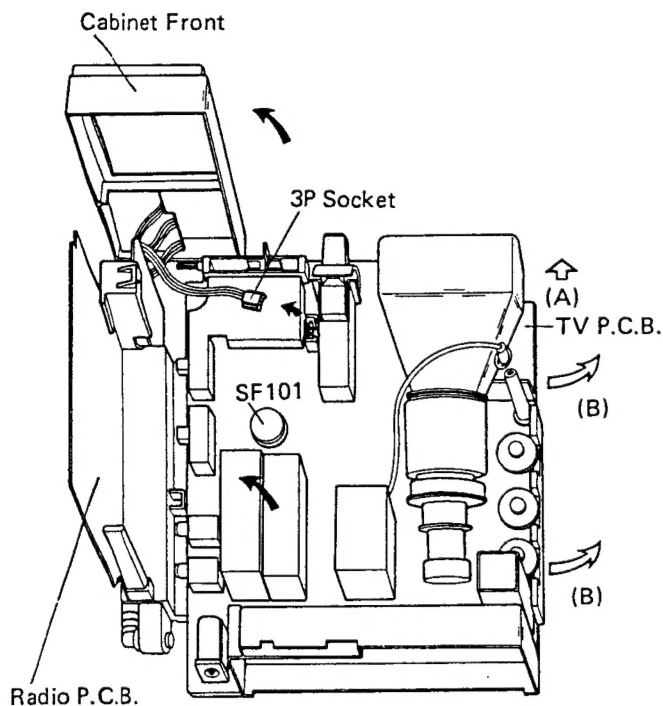


Figure 5

NOTE: When assembling after servicing.

Dress all the leads on Radio P.C.B. to keep away from IC LA4140. Also dress all the leads on TV P.C.B. so that the leads do not cross over to Horizontal Output Trans.

### PICTURE TUBE REMOVAL

1. Remove the Cabinet Top and Radio P.C.B. by following the instructions for them.
2. Remove the anode cap and the picture tube socket. Then, slightly loosen the screw securing the Deflection Yoke.
3. Pull the picture tube toward you.  
(The Safety Shield can be removed under this condition. However, insert the Safety Shield into the CRT when the CRT is mounted. Be sure there is no accumulation of dust between the picture tube face and the Safety Shield when reinstalling.)
4. After picture tube removal.  
Place section (A) of the Cabinet Top on Anode Cap of the picture tube, when Cabinet Top assembling as illustrated in Figure 6.

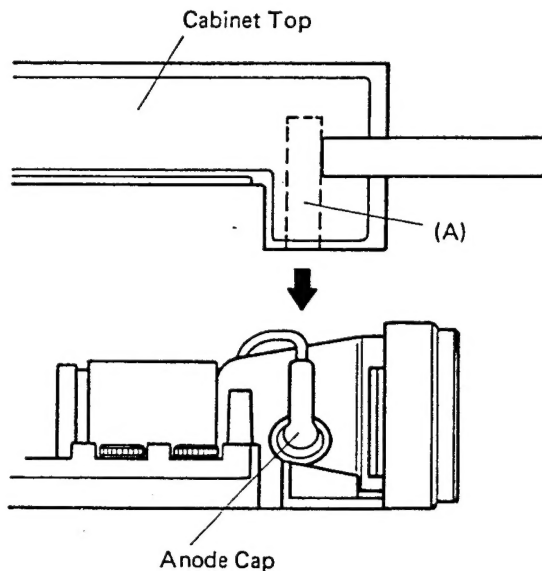


Figure 6

### SPEAKER REMOVAL

When you have replaced the Speaker, Do not forget the lead (Black) roll on magnet of the Speaker and apply plenty of cemedine adhesive around the lead as illustrated in Figure 7.

(REASON: To prevent picture distortion when sound maximum).

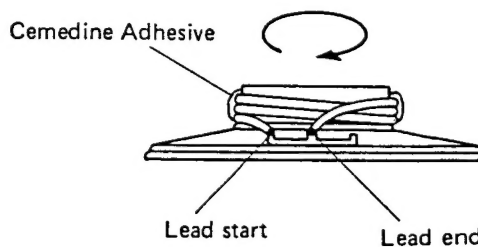


Figure 7

**IMPORTANT NOTICE FOR SERVICE  
PERSONNEL BEFORE SERVICING**

**PLEASE READ BEFORE ATTEMPTING SERVICE**

- 1 The AC power line voltage must be kept within  $\pm 10\%$  of the rated voltage.
- 2 DO NOT DISCHARGE, ARC, OR MEASURE HIGH VOLTAGE WHEN HIGH VOLTAGE LEAD IS CONNECTED TO CRT. DISCHARGE 2ND ANODE OF CRT ONLY AFTER HIGH VOLTAGE LEAD HAS BEEN DISCONNECTED. DO NOT DISCHARGE HIGH VOLTAGE LEAD AT ANY TIME, DAMAGE TO TRANSISTORS MAY RESULT.
- 3 While the receiver is in operation, do not attempt to connect or disconnect any wires.
- 4 Disconnect all power before attempting any repairs.
- 5 When the power is on, do not attempt to short any portion of the circuit. This shorting may cause damage to the transistors in the receiver.
- 6 When adjusting Horizontal Oscillator Frequency, do not vary this frequency more than  $\pm 800$  Hz from 15,750 Hz center frequency: 800 Hz equals 13 bars.

**TELEVISION ADJUSTMENT**

**PICTURE FOCUS (See Fig. 8)**

Adjust focus - VR (FP601) to obtain the best focus. While the adjustment, do not disconnect the picture tube coating earth.

**DEFLECTION YOKE AND CENTERING RINGS**

- 1 Turn the receiver on and disconnect the antenna.
- 2 Loosen the Deflection Yoke Clamp, and carefully move the yoke on the neck of the picture tube as far forward as possible. Rotate the yoke until the top and bottom edges of the raster are straight. Tighten the clamp.
- 3 Center the raster and eliminate shaded corners by rotating the centering rings until the best effect is obtained.

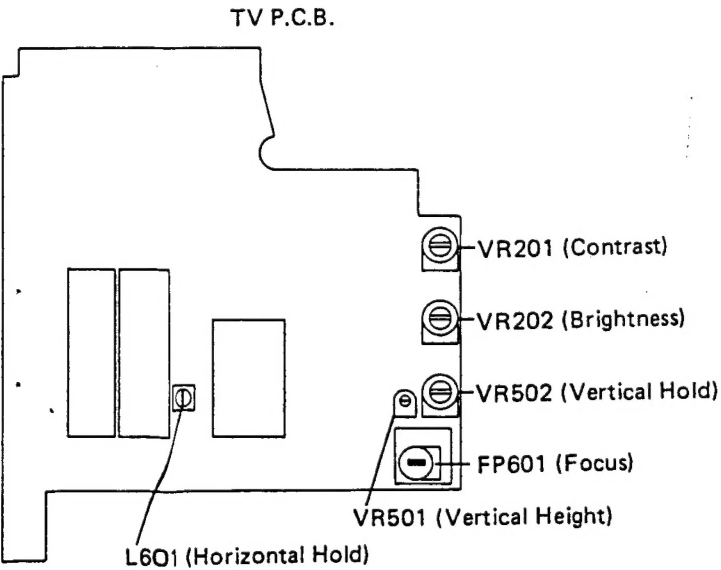


Figure 8

**VERTICAL HEIGHT (See Fig. 8)**

- 1 Adjust the Height control (VR501) to obtain proper picture height.
- 2 Rotate V - Hold control (VR502) completely clockwise or counterclockwise to confirm the picture rolls up or down at both extreme positions.

**HORIZONTAL HOLD CONTROL (See Fig. 8)**

Adjust the H - Hold control (L601) to corrects any slanting of the picture.

**SOUND IF ALIGNMENT PROCEDURE (See Fig. 9)**

- 1 Set the TV System switch to UK position (SW01).
- 2 Set the Signal Generator to 6.0MHz, FM 1KHz $\pm$ 15KHz dev. and Sig. Gen. output 110db.
- 3 Connect the Signal Generator through 4700pF to P4,VTVM to Q (R305) respectively.
- 4 Set the TV Tuning Knob to unused channel.
- 5 Adjust T301 for maximum reading on VTVM.
- 6 Set the Signal Generator to 6.0MHz, AM 1KHz $\pm$ 30%dev, and Sig. Gen. output 40db $\pm$ 10db for maximum reading on VTVM, then adjust T301 for minimum reading on VTVM.
- 7 Set the TV System switch to EUR position (SW01).
- 8 Set the Signal Generator to 5.5MHz, AM 1KHz $\pm$ 30%dev, and Sig. Gen. output 40db $\pm$ 10db for maximum reading on VTVM, then adjust CT302 for minimum reading on VTVM.
- 9 Set the TV System switch to US position (SW01).
- 10 Set the Signal Generator to 4.5MHz, AM 1KHz $\pm$ 30%dev, and Sig. Gen. output 40db $\pm$ 10db for maximum reading on VTVM, then adjust CT301 for minimum reading on VTVM.

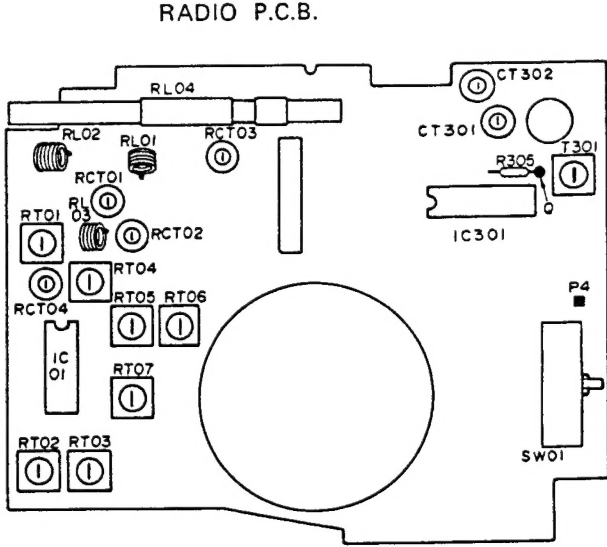


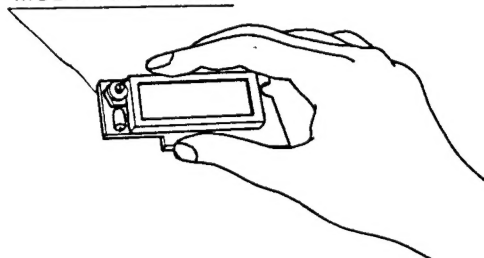
Figure 9

## HANDLING AND REPAIRING OF LCD QUARTZ CLOCK P.C.B.

### HANDLING OF LCD QUARTZ CLOCK P.C.B. (MODULE & CONTROL UNIT)

1. LCD Quartz Clock uses C-MOS LSI and C-MOS IC. These LSI and IC are very sensitive to static electricity and can be easily damaged by the static electricity. Therefore, give a proper protection to the Clock P.C.B. when handling it.
2. As LCD is very weak against ultraviolet rays, do not expose the watch to direct sunlight or extremely hot temperatures.
3. The polarized plate is attached on the surface of LCD to make letter contrasts. As the plate can easily be scratched, pay due caution when handling it.
4. Strong shock on the surface of LCD will cause defective electrical contacts and time display.
5. After attaching LCD to the unit, wipe the surface of LCD clean with a soft cloth to prevent it from electrification.
6. Do not touch the P.C.B. pattern directly. Hold the both ends of the P.C.B.

MODUL UNIT P.C.B.

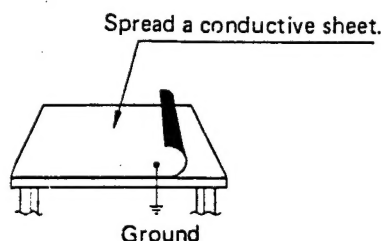


### LCD QUARTZ CLOCK P.C.B. STORAGE

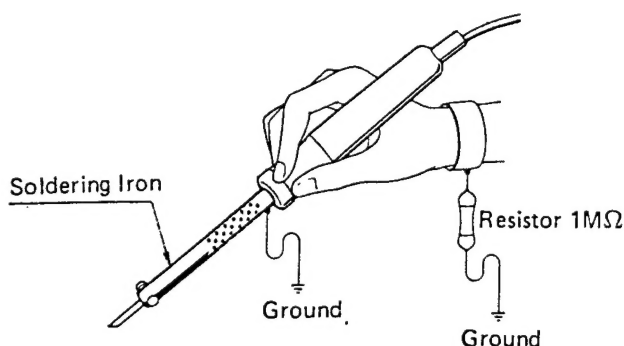
1. Store the watch in an ambient temperature of 0°C – 50°C and low humidity. Also keep it in a dark place.
2. Do not unwrap the package of the parts before use.
3. Completed LCD Quartz Clock P.C.B. and LCD Quartz Clock Control Unit are prepared as repair parts.

### NOTES ON CLOCK P.C.B. REPAIR

1. Spread the conductive sheet on the worktable and ground it. Perform the repair work on the table.



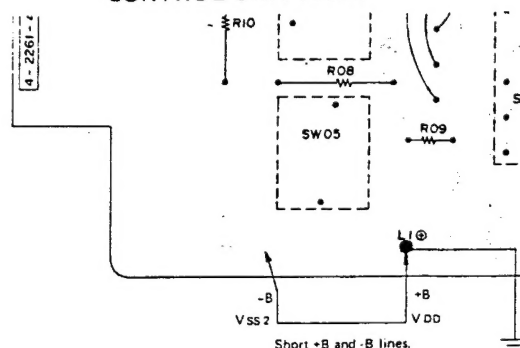
2. Use a soldering iron for IC (Insulation resistance: 300M-ohm) or ground the ordinary soldering iron to prevent alternate current leakage.
3. When performing a repair work, wear the grounded



conductive bracelet with 1M-ohm resistor.

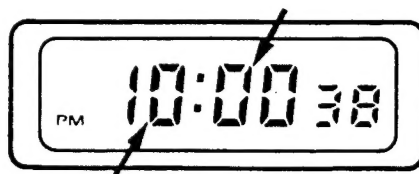
4. Ground the meter body to avoid electrification.
5. Do not use the resistance range at the measurement by the tester.
6. Take out the five dry batteries and a silver oxide battery. Then, remove the LCD Quartz Clock P.C.B. following the disassembly method.
7. Discharge the electric potential by shorting the +B line and -B line in the Clock Control Unit. Then, ground the +B line.

CONTROL UNIT P.C.B.

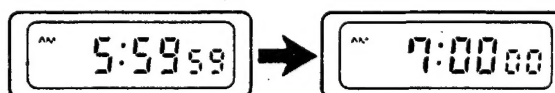


### REPAIR OF LCD QUARTZ WATCH

- Before repair work, check to see that the silver oxide battery is correctly set in the battery holder and that the leads connected to the Watch P.C.B. are not broken.
- When any trouble on the watch display is caused, replace the completed LCD Quartz Clock P.C.B. or the LCD Quartz Control Unit with a new one.
- Replace them when the following troubles appear.
  1. LCD display does not appear when the battery is replaced with a new one.
  2. A part of the digital display is missing as illustrated.

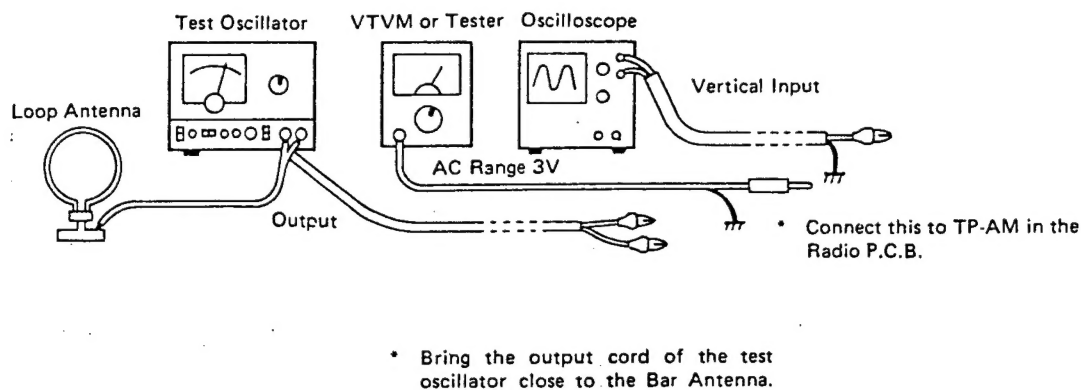


3. Time display is skipped over as illustrated.



# AM RADIO ALIGNMENT PROCEDURE

## CONNECTION OF THE MEASURING INSTRUMENTS



## PRELIMINARIES

- 1 Oscilloscope is set to prevent the waveform from saturating and to obtain peak value.
- 2 Set the VTVM to the 3V, AC range.
- 3 Modulate the test oscillator at 1KHz and set the degree of modulation to approximately 30% if the modulation degree is variable.

## AM IF ADJUSTMENT (460KHz Adjustment)

- 1 Set the test oscillator to 460KHz.
  - 2 Adjust the cores of IFT, RT05, RT06 and RT07 for maximum reading on VTVM. (Repeat the adjustment two or three times.)
- \* Keep the output of the test oscillator as low as possible. Check to see that the waveform is not saturated by using the oscilloscope.

## AM TRACKING ADJUSTMENT

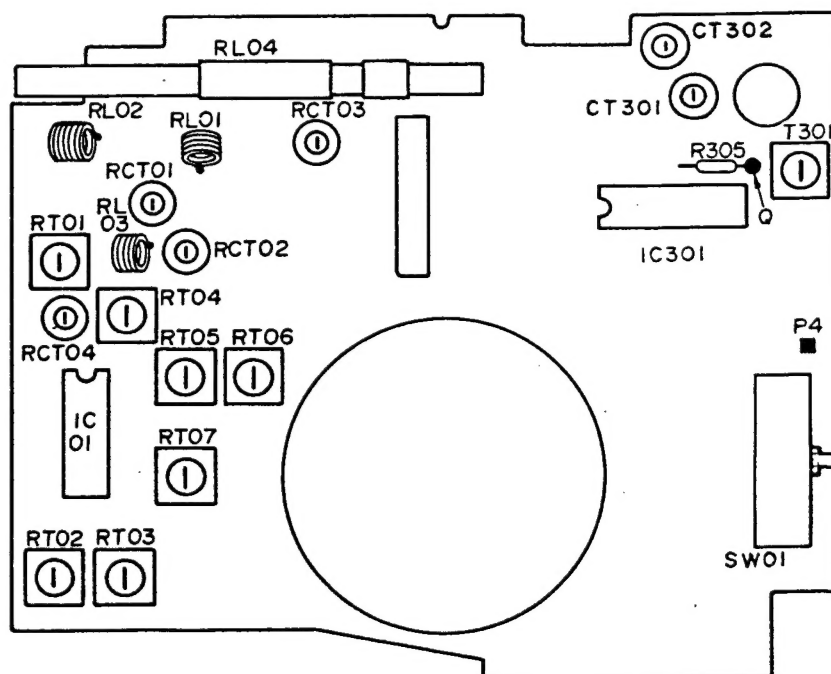
- 1 Remove the paraffin fastening the coil of the bar antenna(RL04), so that the coil can be moved.
  - 2 Set the test oscillator and the Radio Dial to 600KHz.
  - 3 Move the coil of the bar antenna for maximum oscilloscope waveform and VTVM indication.
- \* After adjustment, fasten the coil with paraffin.
- 4 Set the test oscillator and the Radio Dial to 1400KHz.
  - 5 Adjust the trimmer capacitor (RCT03) of the variable capacitor for maximum oscilloscope waveform and VTVM indication.
- \* Repeat the AM frequency range and AM tracking adjustments two or three times.

## AM FREQUENCY RANGE ADJUSTMENT

(Adjustment to cover 530KHz - 1605KHz)

- 1 Set the test oscillator to 505KHz.
- 2 Turn the Radio Tuning Knob to the lower frequency(Tuning Capacitor plates fully meshed).
- 3 Adjust the core of RT04 for maximum oscilloscope waveform and VTVM indication.
- 4 Set the test oscillator to 1650KHz.
- 5 Turn the Radio Tuning Knob to the highest frequency (Tuning Capacitor plates fully open).
- 6 Adjust the trimmer capacitor(RCT04) of the variable capacitor for maximum oscilloscope waveform and VTVM indication.

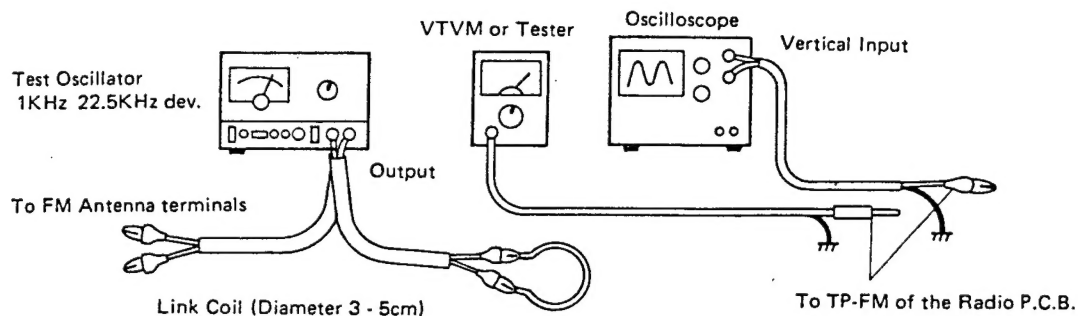
RADIO CHASSIS TOP VIEW





## FM RADIO ALIGNMENT PROCEDURE

### CONNECTION OF THE MEASURING INSTRUMENTS



#### PRELIMINARIES

- 1 Set the VTVM to the 3V, AC range.
- 2 Make a link coil of diameter 3 - 5cm(2") as illustrated for the test oscillator output and set it on Q02 or RL02 when FM IF adjustments are performed. Connect the oscillator output to the FM antenna terminals for some other adjustments.

#### FM IF ADJUSTMENT (10.7MHz Adjustment)

- 1 Set the link coil on RL02.
- 2 Set the test oscillator to 10.7MHz and adjust IFT RT02 for maximum on the VTVM.
- 3 Minimize the test oscillator output as much as possible and adjust IFT RT01, RT02 and RL02 for maximum on the VTVM.
  - \* Repeat the adjustment two or three times.
- 4 Adjust IFT RT03 for maximum on the VTVM.
- 5 Check to see that the indications of VTVM is identical. If not, repeat steps 2 - 4.

#### FM FREQUENCY RANGE ADJUSTMENT

(Adjustment to cover 87.5MHz - 108MHz)

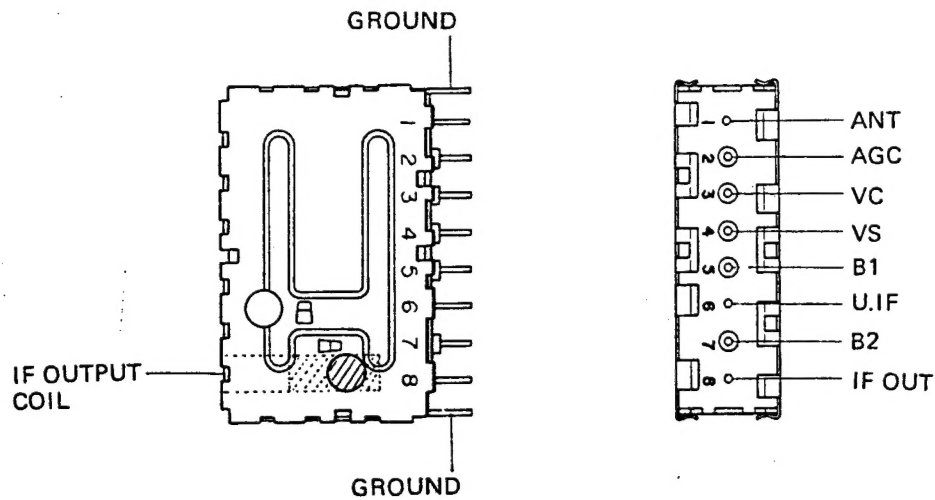
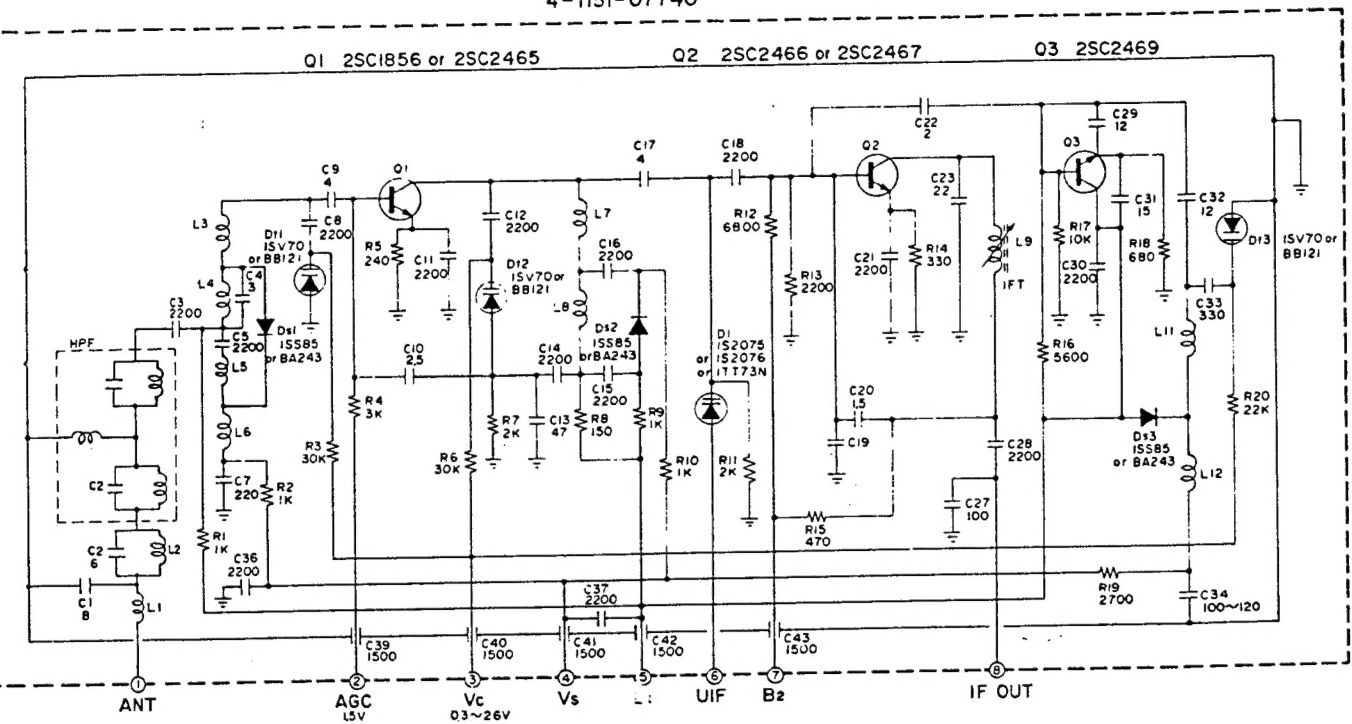
- 1 Set the test oscillator to 87.25MHz and connect it to the FM terminals.
- 2 Turn the Radio Tuning Knob to the lower frequency (Tuning Capacitor plates fully meshed).
- 3 Adjust RL03 for maximum indication on the oscilloscope and VTVM.
  - \* After adjustment, secure RL03 with paraffin.
- 4 Set the test oscillator to 108.40MHz and turn the Radio Tuning Knob to the higher frequency (Tuning Capacitor plates fully open).
- 5 Adjust the trimmer capacitor RCT02 on the variable capacitor for maximum indication on the oscilloscope and VTVM.

#### FM TRACKING ADJUSTMENT

- 1 Set the test oscillator to 90.0MHz and connect the output to the FM antenna terminals.
- 2 Set the Radio Dial to 90.0MHz and adjust RL01 and RL02 for maximum.
  - \* After adjustment, secure RL01 and RL02 with paraffin.
- 3 Set the test oscillator and the Radio Dial to 105.0MHz.
- 4 Adjust the trimmer capacitor RCT01 of the variable capacitor for maximum oscilloscope waveform and VTVM indication.
  - \* Repeat the FM Frequency range and FM tracking adjustments two or three times.

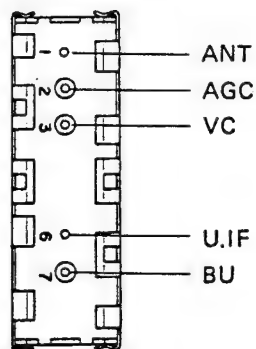
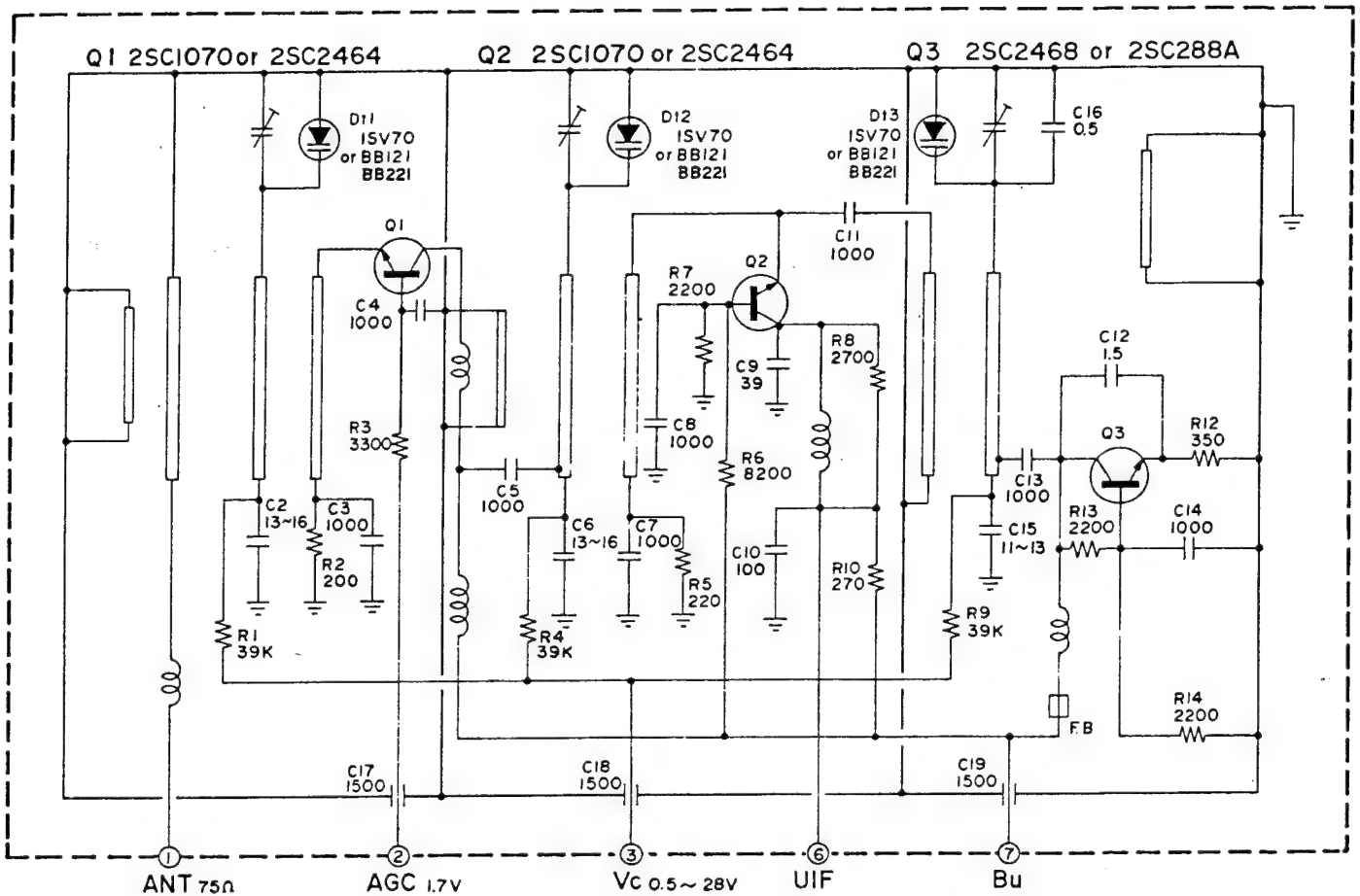
SCHEMATIC DIAGRAM (TUNER)

VHF TUNER  
4-1151-07740



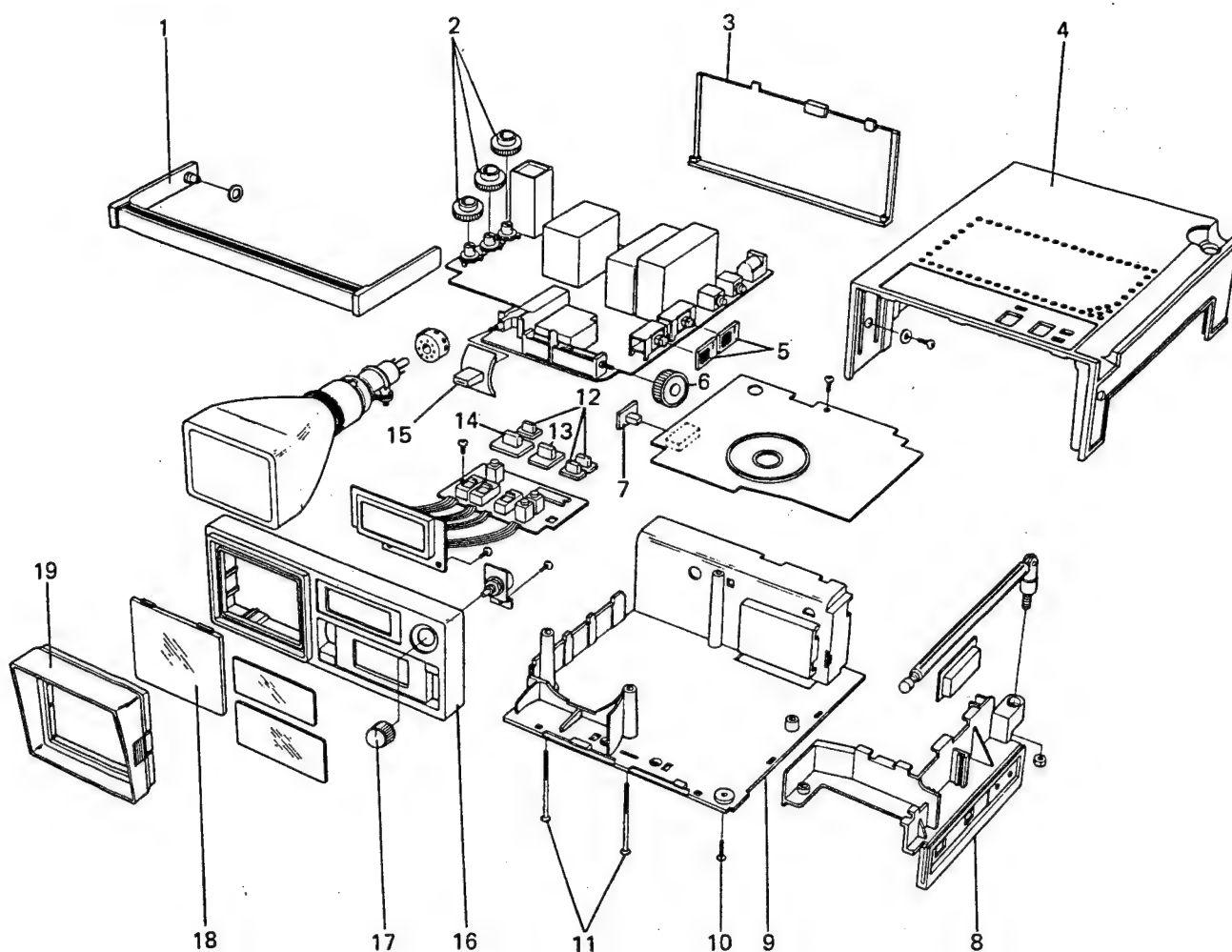
PICTORIAL OF VHF TUNER

# UHF TUNER 4-1151-46540



PICTORIAL OF UHF TUNER

# REPLACEMENT PARTS LIST



Key No.	Parts No.	Description	Q'ty
1	111 0 1711 07170	HANDLE ASSY-TMF	1
2	111 2 1641 24770	TV CONTROL KNOB-TMF	3
3	111 2 1161 18872	BATTERY COVER-TMF-A1	1
4	111 0 1161 16973	CAB TOP ASSY-TMF-A2	1
5	111 2 1641 25070	SELECT KNOB-TMF	2
6	111 2 1631 18270	TUNING KNOB-TMF	1
7	111 2 1641 24970	E/A SELECT KNOB-TMF	1
8	111 2 1241 12072	SIDE PANEL-TMF-A1	1
9	111 0 1161 17075	CAB BOT ASSY-TMF-A4	1
10	111 2 4211 15270	BTP, 3.0x12, C2	1
11	111 2 4211 15070	SUS BTP 3.0x40	2
12	111 2 1641 24470	TIME SET BUTTON-TMF	3
13	111 2 1641 24570	TIMER SW KNOB-TMF	1
14	111 2 1641 25170	TIMER SW KNOB-TMF-B	1
15	111 2 1641 24870	POWER SW KNOB-TMF	1
16	111 0 1121 10573	CAB FR ASSY-TMF-A2	1
17	111 2 1641 24670	VOLUME KNOB-TMF	1
18	111 2 1141 15270	SAFETY SHIELD-TMF	1
19	111 2 6151 10370	HOOD-TMF	1

# PARTS LIST

Schematic Location	Parts No.	Description	Q'ty	Schematic Location	Parts No.	Description	Q'ty
CHASSIS PARTS				SW02			
111 2 5291	12670	CLO PCB HOLDER-TMF	1	4 2311	10670	LEVER SWITCH	1
111 2 6111	27570	TV SHIELD CASE-TMF	1	4 2351	05770	CRT SOCKET	1
111 2 6111	27670	TV SHLD CASE TOP-TMF	1	4 2351	74570	1P DC JACK-E	1
111 2 6111	27770	TV SHLD CASE BOT-TMF	1	4 2361	14570	3P M MICRO PLUG	2
111 2 6211	24370	RADIATOR PLATE-TMF	1	4 2361	14670	1P MICRO PLUG	6
111 2 6231	15670	CRT EARTH TIP-TMF	1	4 2441	06570	ROD ANTENNA	1
111 2 7311	34370	TV PCB INS SHEET-TMF	1	P2	111 0 9081 01011	1P MICRO SOCKET ASSY	1
PACKING MATERIALS				P7	111 0 9081 01012	1P MICRO SOCKET ASSY	1
111 6 1131	21472	OUT CORR CASE-TMF-JC	1	P8	111 0 9081 01013	1P MICRO SOCKET ASSY	1
111 6 1411	12272	IND CASE-TMF-JC	1	P10,11	111 0 9081 01019	1P MICRO SOCKET ASSY	2
111 6 2511	19670	IND POLY COVER-MBA	1	P12,13	111 0 9081 01020	1P MICRO SOCKET ASSY	2
111 6 3111	55170	TOP INNER CUSH-TMF-C	1	111 0 9081 03037	3P NI-CD PLUG ASSY	1	
111 6 3111	55270	BOT INNER CUSH-TMF-C	1	VARIABLE RESISTORS			
111 6 3911	11070	TOP PAD-TMF. J	2	VR001	4 2221 33770	TUNING VR B-100K	1
ACCESSORIES AND LABELS				VR201	4 2221 33870	9CVFR9B-5K	1
4 6611	00270	S-OXIDE BAT G12	1	VR202	4 2221 33970	9CVFR9B-200K	1
111 0 1771	10170	SHOULDER BELT ASSY	1	VR501	4 2221 34170	6CVFRB-2M	1
111 0 6151	10170	HOOD ASSY-TMF	1	VR502	4 2221 34070	9CVFR9B-2M	1
111 0 9021	04170	CONVERSION PLUG ASSY	1	CAPACITORS			
111 0 9131	15600	AC ADAPTOR ASSY	1	C001	C1EYDK102C--	CERAMIC 1000P C 25V	1
111 2 1811	10172	CARRING CASE-TMF-C	1	C002	C1EYDK102C--	CERAMIC 1000P C 25V	1
111 6 2701	14304	PM ASSY TMF-E	1	C003	COJRE-476A--	ELECT 47M 6.3V	1
111 6 2711	05870	ENVELOPE-SR-C	(1)	C101	C1HYDK102W--	CERAMIC 1000P W 50V	1
111 6 4111	97874	INST MANUAL-TMF-E	(1)	C102	C1HCDJ680RH-	CERAMIC 68P RH 50V	1
111 6 4211	26065	SCHEMATIC DIAG-9J	(1)	C103	C1HYDK102W--	CERAMIC 1000P W 50V	1
111 0 9121	06370	EARPHONE	(1)	C104	C1HYDK102W--	CERAMIC 1000P W 50V	1
111 6 2711	05870	ENVELOPE-SR-C	1	C105	C1HYDK102W--	CERAMIC 1000P W 50V	1
111 6 4551	18770	SERIAL NO LABEL-TJP	2	C106	C1HCDJ390RH-	CERAMIC 39P RH 50V	1
SCREWS-CABINET				C107	C1HYDK102W--	CERAMIC 1000P W 50V	1
101 3 1102	60401	SNB . 2.6X 4.Z1	2	C108	C1HCDJ820RH-	CERAMIC 82P RH 50V	1
102 3 2203	00601	SBT . 3.0X 6.Z1	2	C109	C1HYDK102W--	CERAMIC 1000P W 50V	1
102 3 2203	00802	SBT . 3.0X 8.Z1	3	C110	C1HCDJ820RH-	CERAMIC 82P RH 50V	1
102 3 2203	01001	SBT . 3.0X 10.Z1	1	C111	C1HCDD100RH-	CERAMIC 10P RH 50V	1
104 3 1103	00005	ZRN 1. 3.0.	1	C112	C1HCDD100RH-	CERAMIC 10P RH 50V	1
111 2 4211	15070	SUS BTP 2.3.0X40	2	C113	C1HCDD100RH-	CERAMIC 10P RH 50V	1
111 2 4211	15270	BTP 2.3.0X12.C2	1	C114	C1EYDK473C--	CERAMIC 0.047M C 25V	1
SCREWS-CHASSIS				C115	C1EYDK473C--	CERAMIC 0.047M C 25V	1
101 3 1103	00802	SNB . 3.0X 8.Z1	1	C116	C1EYDK473C--	CERAMIC 0.047M C 25V	1
102 3 2203	00802	SBT . 3.0X 8.Z1	2	C117	COJRE-227A--	ELECT 220M 6.3V	1
104 3 1103	00006	SRN 1. 3.0.	1	C118	C1CRE-106A--	ELECT 10M 16V	1
111 3 1103	00803	SBW . 3.0X 8.0X05Z1	1	C119	C1HRE-105A--	ELECT 1M 50V	1
ELECTRICAL PARTS				C120	COJRE-476A--	ELECT 47M 6.3V	1
4 1151	07740	VHF TUNER	1	C121	C1EYDK473C--	CERAMIC 0.047M C 25V	1
4 1151	46540	UHF TUNER	1	C122	C1EYDK473C--	CERAMIC 0.047M C 25V	1
4 1511	09370	SPEAKER	1	C123	C1HRE-105A--	ELECT 1M 50V	1
4 2531	12570	U-V FILTER	1	C124	C1HYDP103Z--	CERAMIC 10000P Z 50V	1
4 9541	00170	LCD CLOCK DQ436	1	C125	C1HYDP103Z--	CERAMIC 10000P Z 50V	1
111 0 9061	42870	CLOCK CONTROL UNIT	1	C126	C1EYDK473C--	CERAMIC 0.047M C 25V	1
111 0 9061	43371	OSC BLOCK UNIT	1	C127	C1EYDK473C--	CERAMIC 0.047M C 25V	1
FP601	4 1911	06070	FOCUS PACK	C202	COJTDMA476A--	TANTAL 47M 6.3V	1
L001	4 2531	12870	FILTER COIL 0.33UH	C203	C1HYDK471W--	CERAMIC 470P W 50V	1
L101	4 2531	15170	FILTER COIL 0.56UH	C204	COJRE-107A--	ELECT 100M 6.3V	1
L102	4 2531	15470	FILTER COIL 1.2UH	C205	C1HDK104C--	M-CERAMIC 0.1M 50V	1
L103	4 2531	13470	FILTER COIL 39MHZ	C401	C1HRE-105A--	ELECT 1M 50V	1
L104	4 2531	13570	FILTER COIL 78MHZ	C402	C1EYDK223C--	CERAMIC 0.022M C 25V	1
L105	4 2721	02209	PEAKING COIL 220	C403	C1EYDK223C--	CERAMIC 0.022M C 25V	1
L106	4 2531	15870	FILTER COIL 0.56UH	C501	C1EYDK473C--	CERAMIC 0.047M C 25V	1
L201	4 2531	15770	FILTER COIL 2.2UH	C502	C1VTDK224A--	TANTAL 0.22M 35V	1
L601	4 2731	06070	HORIZ OSC COIL	C503	C1HDK104C--	M-CERAMIC 0.1M 50V	1
L602	4 2761	49870	DEFLECTION YOKE	C504	C1HRE-105A--	ELECT 1M 50V	1
SF101	4 2531	12423	SAW FILTER	C505	C1EYDK223C--	CERAMIC 0.022M C 25V	1
T601	4 2751	48800	FLYBACK TRANS	C506	C1HYDK102W--	CERAMIC 1000P W 50V	1
X201	4 2531	10570	CERAMIC TRAP 4.5M	C507	C1HYDK561W--	CERAMIC 560P W 50V	1
X202	4 2531	10670	CERAMIC TRAP 5.5M	C508	C1HDK104C--	M-CERAMIC 0.1M 50V	1
SMALL PARTS				C509	COJRE-477A--	ELECT 470M 6.3V	1
4 2261	42671	PC BOARD 9JC-P	1	C510	COJRE-476A--	ELECT 47M 6.3V	1
4 2261	43771	PC BOARD 9JC-U	1	C512	C1HDK823C--	M-CERAMIC 0.082M 50V	1
SW03,04	4 2311	10370	SLIDE SWITCH	C513	C1HDK154C--	M-CERAMIC 0.15M 50V	1
				C514	C1HDK154C--	M-CERAMIC 0.15M 50V	1
				C515	COJRE-108A--	ELECT 1000M 6.3V	1
				C516	C1HDK823C--	M-CERAMIC 0.082M 50V	1
				C601	C1EYDK332C--	CERAMIC 3300P C 25V	1
				C602	C1HFRK472A--	MYLAR 0.0047M 50V	1
				C603	C1HFRK472A--	MYLAR 0.0047M 50V	1

- NOTICE:**
1. Parts orders must contain Model Number, Parts Number and Description.
  2. Ordering quantity of resistors must be multiple of 10pcs.
  3. Component parts indicated by parentheses in the column Q'ty are not available.

# PARTS LIST

Schematic Location	Parts No.	Description	Q'ty	Schematic Location	Parts No.	Description	Q'ty
C604	C1HDRK104C--	M-CERAMIC 0.1M 50V	1	R407	R2BSUJ123A	CARBON 12K 1/8WJ	1
C605	C1ERE-475A--	ELECT 4.7M 25V	1	R501	R2ESPJ5R6A	CARBON 5.6 1/4WJ	1
C606	C1HFRJ183A--	MYLAR 0.018M 50V	1	R502	R2BSUJ472A	CARBON 4.7K 1/8WJ	1
C607	C1HDRK104C--	M-CERAMIC 0.1M 50V	1	R503	R2BSPJ124A	CARBON 120K 1/8WJ	1
C608	C0JRE-476A--	ELECT 47M 6.3V	1	R504	R2BSPJ334A	CARBON 330K 1/8WJ	1
C609	C1CRE-106A--	ELECT 10M 16V	1	R505	R2BSUJ101A	CARBON 100 1/8WJ	1
C610	C2AQRJ273A--	POLYPR 0.027M 100V	1	R506	R2BSPJ394A	CARBON 390K 1/8WJ	1
C611	C2HYDK102W--	CERAMIC 1000P W 500V	1	R507	R2BSPJ105A	CARBON 1M 1/8WJ	1
C612	C0JRE-477A--	ELECT 470M 6.3V	1	R508	R2BSPJ104A	CARBON 100K 1/8WJ	1
C613	C1HRE-475A--	ELECT 4.7M 50V	1	R509	R2BSPJ394A	CARBON 390K 1/8WJ	1
C614	C1ERE-475A--	ELECT 4.7M 25V	1	R510	R2BSPJ124A	CARBON 120K 1/8WJ	1
C615	C1HRE-105A--	ELECT 1M 50V	1	R511	R2BSPJ823A	CARBON 82K 1/8WJ	1
C616	C1HFRK473A--	MYLAR 0.047M 50V	1	R512	R2BSPJ333A	CARBON 33K 1/8WJ	1
C617	C1HFRK223A--	MYLAR 0.022M 50V	1	R513	R2BSPJ220A	CARBON 22 1/8WJ	1
C620	C1HYDK561W--	CERAMIC 560P W 50V	1	R514	R2BSUJ562A	CARBON 5.6K 1/8WJ	1
C621	C3AKDP472Z--	CERAMIC 4700P Z 1KV	1	R515	R2BSUJ221A	CARBON 220 1/8WJ	1
C701	C1CRE-106A--	ELECT 10M 16V	1	R516	R2BSUJ224A	CARBON 220K 1/8WJ	1
C702	C1EYDK473C--	CERAMIC 0.047M C 25V	1	R517	R2BSUJ184A	CARBON 180K 1/8WJ	1
C703	C1EYDK473C--	CERAMIC 0.047M C 25V	1	R518	R2BSUJ473A	CARBON 47K 1/8WJ	1
C704	C1CRE-476A--	ELECT 47M 16V	1	R519	R2BSUJ2R2A	CARBON 2.2 1/8WJ	1
FIXED RESISTORS				R520	R2BSUJ8R2A	CARBON 8.2 1/8WJ	1
R001	R2BSUJ222A	CARBON 2.2K 1/8WJ	1	R521	R2BSUJ473A	CARBON 47K 1/8WJ	1
R002	R2BSUJ472A	CARBON 4.7K 1/8WJ	1	R522	R2BSUJ220A	CARBON 22 1/8WJ	1
R003	R2BSUJ222A	CARBON 2.2K 1/8WJ	1	R523	R2BSPJ824A	CARBON 820K 1/8WJ	1
R101	R2BSUJ123A	CARBON 12K 1/8WJ	1	R601	R2BSUJ561A	CARBON 560 1/8WJ	1
R102	R2BSUJ272A	CARBON 2.7K 1/8WJ	1	R602	R2BSUJ103A	CARBON 10K 1/8WJ	1
R104	R2BSUJ221A	CARBON 220 1/8WJ	1	R603	R2BSUJ392A	CARBON 3.9K 1/8WJ	1
R105	R2BSUJ561A	CARBON 560 1/8WJ	1	R604	R2BSUJ102A	CARBON 1K 1/8WJ	1
R106	R2BSUJ101A	CARBON 100 1/8WJ	1	R606	R2BSUJ222A	CARBON 2.2K 1/8WJ	1
R107	R2BSUJ123A	CARBON 12K 1/8WJ	1	R606	R2BSUJ472A	CARBON 4.7K 1/8WJ	1
R108	R2BSUJ272A	CARBON 2.7K 1/8WJ	1	R607	R2BSUJ183A	CARBON 18K 1/8WJ	1
R109	R2BSUJ221A	CARBON 220 1/8WJ	1	R608	R2BSUJ390A	CARBON 39 1/8WJ	1
R110	R2BSUJ682A	CARBON 6.8K 1/8WJ	1	R609	R2BSUJ121A	CARBON 120 1/8WJ	1
R111	R2BSUJ152A	CARBON 1.5K 1/8WJ	1	R610	R2BSPJ471A	CARBON 470 1/8WJ	1
R112	R2BSPJ121A	CARBON 120 1/8WJ	1	R611	R2BSUJ101A	CARBON 100 1/8WJ	1
R113	R2BSUJ123A	CARBON 12K 1/8WJ	1	R612	R2BSUJ821A	CARBON 820 1/8WJ	1
R114	R2BSUJ222A	CARBON 2.2K 1/8WJ	1	R613	R2BSUJ100A	CARBON 10 1/8WJ	1
R115	R2BSUJ271A	CARBON 270 1/8WJ	1	R614	R2BSPJ183A	CARBON 18K 1/8WJ	1
R116	R2BSUJ182A	CARBON 1.8K 1/8WJ	1	R615	R2BSPJ472A	CARBON 4.7K 1/8WJ	1
R117	R2BSUJ182A	CARBON 1.8K 1/8WJ	1	R616	R2BSUJ472A	CARBON 4.7K 1/8WJ	1
R118	R2BSUJ101A	CARBON 100 1/8WJ	1	R617	R2BSUJ471A	CARBON 470 1/8WJ	1
R119	R2BSUJ682A	CARBON 6.8K 1/8WJ	1	R618	R2BSUJ182A	CARBON 1.8K 1/8WJ	1
R120	R2BSUJ2R2A	CARBON 2.2 1/8WJ	1	R619	R2BSPJ564A	CARBON 560K 1/8WJ	1
R121	R2BSUJ152A	CARBON 1.5K 1/8WJ	1	R701	R2HCPK101A	SOLID 100 1/2WK	1
R122	R2BSUJ271A	CARBON 270 1/8WJ	1	R702	R2BSPJ222A	CARBON 2.2K 1/8WJ	1
R123	R2BSUJ152A	CARBON 1.5K 1/8WJ	1	R703	R2BSPJ122A	CARBON 1.2K 1/8WJ	1
R124	R2BSUJ183A	CARBON 18K 1/8WJ	1	R705	R2BSUJ221A	CARBON 220 1/8WJ	1
R125	R2BSUJ823A	CARBON 82K 1/8WJ	1	TUBES AND SEMICONDUCTORS			
R126	R2BSUJ332A	CARBON 3.3K 1/8WJ	1	D001	4 2021 18770	SI DIODE MA56	1
R127	R2BSUJ821A	CARBON 820 1/8WJ	1	D101	4 2021 07470	SI DIODE 1S2076	1
R128	R2BSUJ223A	CARBON 22K 1/8WJ	1	D102	4 2021 07470	SI DIODE 1S2076	1
R129	R2BSUJ332A	CARBON 3.3K 1/8WJ	1	D103	4 2020 03500	GE DIODE 1S188TV	1
R130	R2BSUJ102A	CARBON 1K 1/8WJ	1	D104	4 2020 03500	GE DIODE 1S188TV	1
R131	R2BSUJ821A	CARBON 820 1/8WJ	1	D501	4 2021 07470	SI DIODE 1S2076	1
R132	R2BSUJ102A	CARBON 1K 1/8WJ	1	D502	4 2021 07470	SI DIODE 1S2076	1
R201	R2BSUJ220A	CARBON 22 1/8WJ	1	D503	4 2021 07470	SI DIODE 1S2076	1
R202	R2BSUJ821A	CARBON 820 1/8WJ	1	D601	4 2020 03500	GE DIODE 1S188TV	1
R203	R2BSUJ820A	CARBON 82 1/8WJ	1	D602	4 2020 03500	GE DIODE 1S188TV	1
R204	R2BSPJ682A	CARBON 6.8K 1/8WJ	1	D603	4 2020 03500	GE DIODE 1S188TV	1
R205	R2BSPJ392A	CARBON 3.9K 1/8WJ	1	D604	4 2021 17370	SI DIODE W09C	1
R206	R2BSPJ122A	CARBON 1.2K 1/8WJ	1	D605	4 2021 07670	SI DIODE 1S2076A	1
R207	R2BSUJ102A	CARBON 1K 1/8WJ	1	D606	4 2021 07670	SI DIODE 1S2076A	1
R208	R2BSPJ123A	CARBON 12K 1/8WJ	1	D607	4 2021 07470	SI DIODE 1S2076	1
R209	R2BSUJ561A	CARBON 560 1/8WJ	1	D608	4 2021 20770	ZE DIODE RD4.3E	1
R210	R2BSPJ222A	CARBON 2.2K 1/8WJ	1	D701	4 2020 03500	GE DIODE 1S188TV	1
R211	R2BSUJ224A	CARBON 220K 1/8WJ	1	D702	4 2021 21170	ZE DIODE RD7.5E62	1
R212	R2ESPJ225A	CARBON 2.2M 1/4WJ	1	D703	4 2021 07470	SI DIODE 1S2076	1
R213	R2BSUJ222A	CARBON 2.2K 1/8WJ	1	D704	4 2021 07470	SI DIODE 1S2076	1
R401	R2BSUJ101A	CARBON 100 1/8WJ	1	D705	4 2021 07470	SI DIODE 1S2076	1
R402	R2BSUJ561A	CARBON 560 1/8WJ	1	IC601	4 2021 10970	IC ZE DIODE UPC574J	1
R403	R2BSUJ224A	CARBON 220K 1/8WJ	1	Q101	TG2SC930SPE--	SI TR 2SC930SP	1
R404	R2BSUJ473A	CARBON 47K 1/8WJ	1	Q102	TG2SC2057-E1-	SI TR 2SC2057	1
R405	R2BSUJ681A	CARBON 680 1/8WJ	1	Q103	TG2SC930SPE--	SI TR 2SC930SP	1
R406	R2BSUJ472A	CARBON 4.7K 1/8WJ	1	Q104	TG2SC930SPE--	SI TR 2SC930SP	1

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# PARTS LIST

Schematic Location	Parts No.	Description	Q'ty	Schematic Location	Parts No.	Description	Q'ty
Q105	TG2SC930SPE--	SI TR 2SC930SP	1	C325	C1EYDK472C--	CERAMIC 4700P C 25V	1
Q106	TG2SA608SPF--	SI TR 2SA608SP	1	C326	C1EYDK473C--	CERAMIC 0.047M C 25V	1
Q107	TG2SC536SPE--	SI TR 2SC536SP	1	C327	C1HCDK330RH-	CERAMIC 33P RH 50V	1
Q108	TG2SA608SPF--	SI TR 2SA608SP	1	C328	C1HCDK2R0RH-	CERAMIC 2P RH 50V	1
Q201	TG2SC536SP--	SI TR 2SC536SP	1	C329	C1EYDK223C--	CERAMIC 0.022M C 25V	1
or	TT2SC2458-GR-	SI TR 2SC2458	1	C330	C1EYDK223C--	CERAMIC 0.022M C 25V	1
or	TT2SC2458-Y--	SI TR 2SC2458	1	C331	C1EYDK472C--	CERAMIC 4700P C 25V	1
Q202	TG2SC536SP--	SI TR 2SC536SP	1	D301	4 2021 20970	SI DIODE W03A	1
or	TT2SC2458-GR-	SI TR 2SC2458	1	D302	4 2021 20870	ZE DIODE RD5.6EB1	1
or	TT2SC2458-Y--	SI TR 2SC2458	1	D303	4 2021 07470	SI DIODE 1S2076	1
Q203	TN2SC945--P--	SI TR 2SC945	1	D304	4 2021 07470	SI DIODE 1S2076	1
or	TN2SC945--Q--	SI TR 2SC945	1	D305	4 2021 07470	SI DIODE 1S2076	1
Q401	TG2SA608SPE--	SI TR 2SA608SP	1	D306	4 2021 07470	SI DIODE 1S2076	1
Q501	TG2SC536--F--	SI TR 2SC536	1	D307	4 2021 07470	SI DIODE 1S2076	1
Q502	TG2SC536SPF--	SI TR 2SC536SP	1	IC301	4 2061 09670	IC-HA11229	1
or	TT2SC2458-GR-	SI TR 2SC2458	1	IC302	4 2061 09770	IC-LA4140	1
Q503	TG2SC536SPF--	SI TR 2SC536SP	1	L301	4 2721 02209	PEAKING COIL 220	1
or	TT2SC2458-GR-	SI TR 2SC2458	1	L302	4 2591 05370	FM PHASE COIL 68UH	1
Q504	TG2SC536SPF--	SI TR 2SC536SP	1	L303	4 2721 02209	PEAKING COIL 220	1
or	TG2SC536SPG--	SI TR 2SC536SP	1	Q301	TT2SC2236----	SI TR 2SC2236	1
or	TT2SC2458-BL-	SI TR 2SC2458	1	RBPFI	4 2531 12770	FM BAND PASS FILTER	1
or	TT2SC2458-GR-	SI TR 2SC2458	1	RCF1	4 2531 11871	CERAMIC FILTER 10.7M	1
Q505	TG2SD545--F--	SI TR 2SD545	1	RCT1	4 2241 04770	TRIMMER CAP 7PMAX	1
Q506	TG2SB598--F--	SI TR 2SB598	1	RCT2	4 2241 04570	TRIMMER CAP 20PMAX	1
Q507	TG2SC536SPF--	SI TR 2SC536SP	1	RCT3	4 2241 04770	TRIMMER CAP 7PMAX	1
or	TG2SC536SPG--	SI TR 2SC536SP	1	RCT4	4 2241 04770	TRIMMER CAP 7PMAX	1
or	TT2SC2458-GR-	SI TR 2SC2458	1	RC01	C1EYDK472C--	CERAMIC 4700P C 25V	1
or	TT2SC2458-GR-	SI TR 2SC2458	1	RC02	C1EYDK223C--	CERAMIC 0.022M C 25V	1
Q601	TG2SC536--F--	SI TR 2SC536	1	RC03	C1EYDK103C--	CERAMIC 0.01M C 25V	1
Q602	TG2SC536SPF--	SI TR 2SC536SP	1	RC04	C1EYDK223C--	CERAMIC 0.022M C 25V	1
or	TG2SC536SPG--	SI TR 2SC536SP	1	RC05	C1HCDK2R0RH-	CERAMIC 2P RH 50V	1
or	TT2SC2458-GR-	SI TR 2SC2458	1	RC07	C1HCDK5R0RH-	CERAMIC 5P RH 50V	1
Q603	TM2SC2264----	SI TR 2SC2264	1	RC08	C1HCDK2R0RH-	CERAMIC 2P RH 50V	1
Q701	TG2SD826-----	SI TR 2SD826	1	RC09	C1HCDK220RH-	CERAMIC 22P RH 50V	1
Q702	TG2SC536SPF--	SI TR 2SC536SP	1	RC10	C1HYDK221W--	CERAMIC 220P W 50V	1
or	TG2SC536SPG--	SI TR 2SC536SP	1	RC11	C1EYDK103C--	CERAMIC 0.01M C 25V	1
or	TT2SC2458-GR-	SI TR 2SC2458	1	RC12	C1EYDK223C--	CERAMIC 0.022M C 25V	1
TH101	4 2041 05370	THERMISTOR SDT-35	1	RC13	C1HRE-105A--	ELECT 1M 50V	1
TH501	4 2041 04870	THERMISTOR SDT-1000	1	RC14	C1EYDK223C--	CERAMIC 0.022M C 25V	1
TH502	4 2041 05470	THERMISTOR SDT-02	1	RC15	C1EYDK223C--	CERAMIC 0.022M C 25V	1
TH601	4 2041 04770	THERMISTOR SDT-100	1	RC16	C1EYDK223C--	CERAMIC 0.022M C 25V	1
V201	QEME2225----S	CRT E2225	1	RC17	C1HCDK2R0RH-	CERAMIC 2P RH 50V	1
or	QNM205P4---S	CRT C205P4	1	RC18	C1HCDJ220RH-	CERAMIC 22P RH 50V	1
ELECTRICAL PARTS (RADIO/TV SIF)				RC19	C1HCDK150RH-	CERAMIC 15P RH 50V	1
111 0 9181 00472	RADIO ASSY	1		RC20	C1HCDK150RH-	CERAMIC 15P RH 50V	1
111 0 9061 42772	RADIO PCB ASSY	1		RC21	C1EYDK223C--	CERAMIC 0.022M C 25V	1
4 2261 42772	PC BOARD 9JC-R2	1		RC22	C1HCDK100RH-	CERAMIC 10P RH 50V	1
4 2361 14670	1P MICRO PLUG	7		RC23	C1EYDK103C--	CERAMIC 0.01M C 25V	1
111 2 3551 26370	VR MTG BRKT-TMF	1		RC24	C1HCDK6R0RH-	CERAMIC 6P RH 50V	1
CT301	4 2241 04570	TRIMMER CAP 20PMAX	1	RC25	C1EYDK223C--	CERAMIC 0.022M C 25V	1
CT302	4 2241 04570	TRIMMER CAP 20PMAX	1	RC26	C1EYDK103C--	CERAMIC 0.01M C 25V	1
C301	C1EYDK223C--	CERAMIC 0.022M C 25V	1	RC27	C1ERE-475A--	ELECT 4.7M 25V	1
C302	COJRE-476A--	ELECT 47M 6.3V	1	RC28	C1HYDK221W--	CERAMIC 220P W 50V	1
C303	COJTD476A--	TANTAL 47M 6.3V	1	RC29	C1HYDK221W--	CERAMIC 220P W 50V	1
C304	C1ERE-475A--	ELECT 4.7M 25V	1	RC30	C1EYDK223C--	CERAMIC 0.022M C 25V	1
C305	C1EYDK473C--	CERAMIC 0.047M C 25V	1	RC31	C1HRE-474A--	ELECT 0.47M 50V	1
C306	C1EYDK103C--	CERAMIC 0.01M C 25V	1	RC32	C1EYDK223C--	CERAMIC 0.022M C 25V	1
C307	C1EYDK103C--	CERAMIC 0.01M C 25V	1	RC33	C1ERE-475A--	ELECT 4.7M 25V	1
C308	C1EYDK473C--	CERAMIC 0.047M C 25V	1	RC34	C1EYDK223C--	CERAMIC 0.022M C 25V	1
C309	C1EYDK103C--	CERAMIC 0.01M C 25V	1	RC36	COJRE-107A--	ELECT 100M 6.3V	1
C310	C1EYDK473C--	CERAMIC 0.047M C 25V	1	RC37	C1EYDK223C--	CERAMIC 0.022M C 25V	1
C311	C1ETDM105A--	TANTAL 1M 25V	1	RC38	C1HCDK2R0RH-	CERAMIC 2P RH 50V	1
C312	C1HCDK330RH-	CERAMIC 33P RH 50V	1	RC39	C1EYDK103C--	CERAMIC 0.01M C 25V	1
C313	C1HYDK221W--	CERAMIC 220P W 50V	1	RC41	C1EYDK223C--	CERAMIC 0.022M C 25V	1
C314	C1EYDK473C--	CERAMIC 0.047M C 25V	1	RC42	COJTD476A--	TANTAL 47M 6.3V	1
C315	COJRE-107A--	ELECT 100M 6.3V	1	RC43	C1EYDK102C--	CERAMIC 1000P C 25V	1
C316	C1CRE-106A--	ELECT 10M 16V	1	RC44	C1EYDK223C--	CERAMIC 0.022M C 25V	1
C317	C1EYDK222C--	CERAMIC 2200P C 25V	1	RC45	C1HSEJ331A--	STYROL 330P 50V	1
C318	C1EYDK103C--	CERAMIC 0.01M C 25V	1	RC46	C1HCDK2R0RH-	CERAMIC 2P RH 50V	1
C319	COJRE-476A--	ELECT 47M 6.3V	1	RC47	C1EYDK103C--	CERAMIC 0.01M C 25V	1
C320	C1HFRK683A--	MYLAR 0.068M 50V	1	RC48	C1EYDK473C--	CERAMIC 0.047M C 25V	1
C321	COJRE-477A--	ELECT 470M 6.3V	1	RC49	C1ARE-106A--	ELECT 10M 10V	1
C322	COJRE-107A--	ELECT 100M 6.3V	1	RC50	C1EYDK223C--	CERAMIC 0.022M C 25V	1
C323	C1EYDK473C--	CERAMIC 0.047M C 25V	1	RC51	C1ARE-226A--	ELECT 22M 10V	1
C324	COJTD476A--	TANTAL 47M 6.3V	1	RC52	C1EYDK103C--	CERAMIC 0.01M C 25V	1

NOTICE: 1. Parts orders must contain Model Number, Parts Number and Description.  
2. Ordering quantity of resistors must be multiple of 10pcs.  
3. Component parts indicated by parentheses in the column Q'ty are not available.



# PARTS LIST

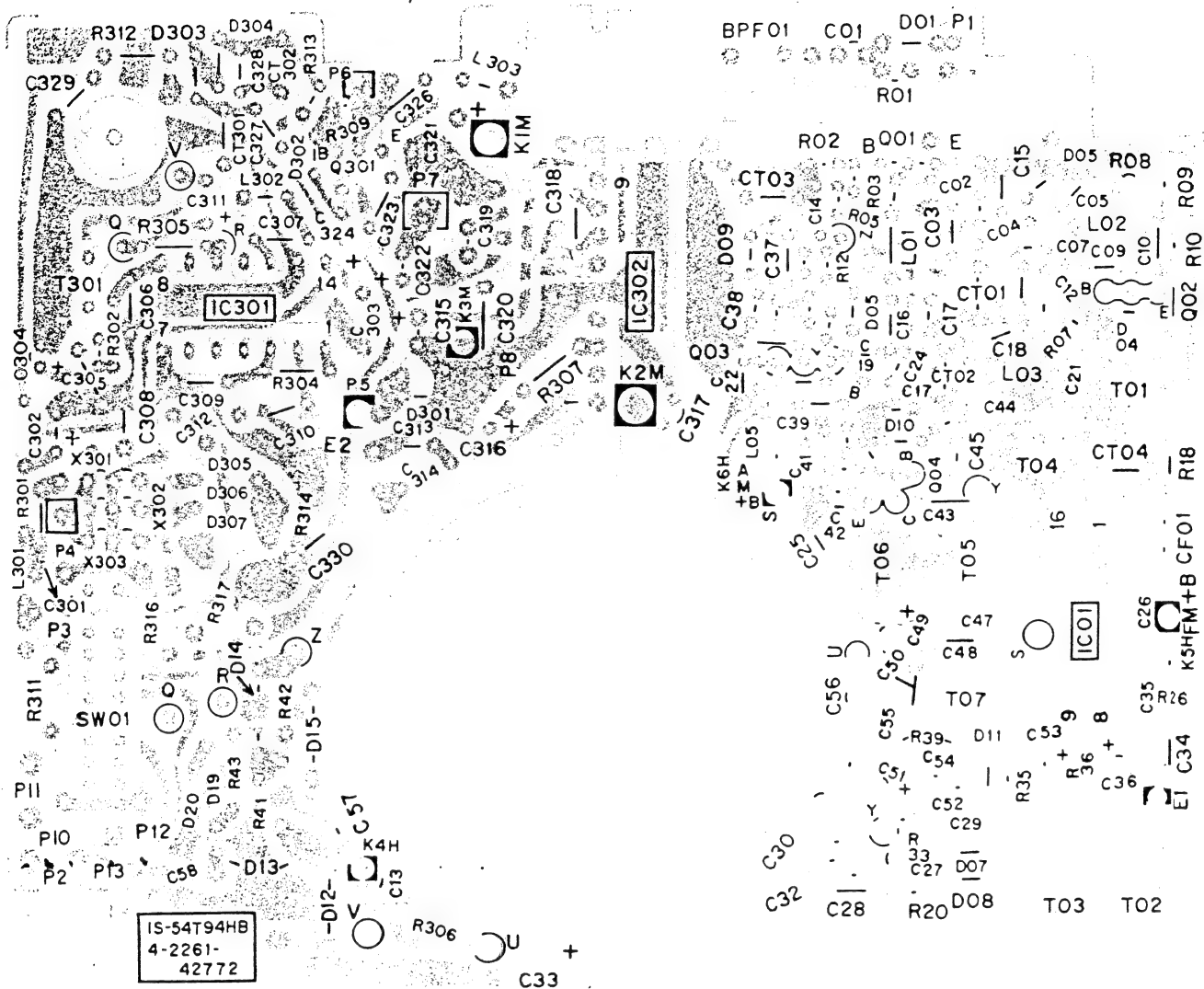
Schematic Location	Parts No.	Description	Q'ty	Schematic Location	Parts No.	Description	Q'ty
RC53	C1ERE-476A--	ELECT 47M 25V	1	RR42	R2BSPJ104A	CARBON 100K 1/8WJ	1
RC54	C1EYDK103C--	CERAMIC 0.01M C 25V	1	RR43	R2BSPJ474A	CARBON 470K 1/8WJ	1
RC55	C1EYDK223C--	CERAMIC 0.022M C 25V	1	RT01	4 2561 08970	FM IF TRANS	1
RC56	C1HDRK683C--	M-CERAMIC 0.068M 50V	1	RT02	4 2561 09070	FM IF TRANS	1
RC57	C1EYDK472C--	CERAMIC 4700P C 25V	1	RT03	4 2561 09170	FM IF TRANS	1
RC58	C1HYDP103Z--	CERAMIC 10000P Z 50V	1	RT04	4 2561 09270	AM OSC TRANS	1
RD01	4 2021 18770	SI DIODE MA56	1	RT05	4 2561 09370	AM IF TRANS	1
RD03	4 2021 20370	VARACTOR DI SVC201	1	RT06	4 2561 09470	AM IF TRANS	1
RD04	4 2021 07470	SI DIODE 1S2076	1	RT07	4 2561 09570	AM IF TRANS	1
RD05	4 2021 20370	VARACTOR DI SVC201	1	R301	R2BSPJ680A	CARBON 68 1/8WJ	1
RD06	4 2021 15370	VARACTOR DIODE 1S553	1	R302	R2BSPJ472A	CARBON 4.7K 1/8WJ	1
RD07	4 2021 15270	GE DIODE 1S188FM	1	R303	R2BSUJ223A	CARBON 22K 1/8WJ	1
RD08	4 2021 15270	GE DIODE 1S188FM	1	R304	R2BSPJ102A	CARBON 1K 1/8WJ	1
RD09	4 2021 20470	VARACTOR DI SVC303	1	R305	R2BSPJ822A	CARBON 8.2K 1/8WJ	1
RD10	4 2021 20470	VARACTOR DI SVC303	1	R306	R2BSPJ102A	CARBON 1K 1/8WJ	1
RD11	4 2021 15270	GE DIODE 1S188FM	1	R307	R2BSPJ151A	CARBON 150 1/8WJ	1
RD12	4 2021 20170	ZE DIODE RD10EB3	1	R309	R2BSUJ821A	CARBON 820 1/8WJ	1
RD13	4 2021 07470	SI DIODE 1S2076	1	R311	R2BSPJ123A	CARBON 12K 1/8WJ	1
RD14	4 2021 07470	SI DIODE 1S2076	1	R312	R2BSPJ472A	CARBON 4.7K 1/8WJ	1
RD15	4 2021 07470	SI DIODE 1S2076	1	R313	R2BSPJ472A	CARBON 4.7K 1/8WJ	1
RD19	4 2021 07470	SI DIODE 1S2076	1	R314	R2BSPJ472A	CARBON 4.7K 1/8WJ	1
RD20	4 2021 07470	SI DIODE 1S2076	1	R315	R2BSPJ472A	CARBON 4.7K 1/8WJ	1
RLC1	4 2061 08970	IC-UPC1018C	1	R316	R2BSPJ472A	CARBON 4.7K 1/8WJ	1
RL01	4 2591 05070	FM RF COIL	1	R317	R2BSPJ472A	CARBON 4.7K 1/8WJ	1
RL02	4 2591 05270	FM TRAP COIL	1	SW01	4 2311 10370	SLIDE SWITCH	1
RL03	4 2581 04770	FM OSC COIL	1	T301	4 2561 94370	QUADRATURE COIL	1
RL04	4 2571 04870	BAR ANTENNA	1	VR301	4 2221 34870	12FRN10FB-10K	1
RL05	4 2721 00689	PEAKING COIL 68	1	X301	4 2531 10970	CERAMIC FILTER 4.5M	1
RQ01	TG2SC668--D--	SI TR 2SC668	1	X302	4 2531 11070	CERAMIC FILTER 5.5M	1
or	TG2SC668--E--	SI TR 2SC668	1	X303	4 2531 11170	CERAMIC FILTER 6.0M	1
RQ02	TG2SC668--D--	SI TR 2SC668	1	P1	111 0 9081 01014	1P MICRO SOCKET ASSY	1
or	TG2SC668--E--	SI TR 2SC668	1	P3	111 0 9081 01015	1P MICRO SOCKET ASSY	1
or	TT2SC2668----	SI TR 2SC2668	1	P5	111 0 9081 01016	1P MICRO SOCKET ASSY	1
RQ03	TG2SC930SP---	SI TR 2SC930SP	1	P6	111 0 9081 01017	1P MICRO SOCKET ASSY	1
or	TT2SC2669----	SI TR 2SC2669	1	P4	111 0 9081 01021	1P MICRO SOCKET ASSY	1
RQ04	TG2SC2210----	SI TR 2SC2210	1		111 0 9081 03036	3P M MICRO SOCKET AY	1
RR01	R2BSUJ472A	CARBON 4.7K 1/8WJ	1		111 9 1800 00750	SHIELD WIRE TMF-JPN	1
RR02	R2BSUJ154A	CARBON 150K 1/8WJ	1		111 2 6111 28270	RADIO SHLD PLATE-TMF	1
RR03	R2BSUJ393A	CARBON 39K 1/8WJ	1				
RR04	R2BSUJ102A	CARBON 1K 1/8WJ	1				
RR05	R2BSUJ221A	CARBON 220 1/8WJ	1				
RR06	R2BSUJ124A	CARBON 120K 1/8WJ	1				
RR07	R2BSUJ101A	CARBON 100 1/8WJ	1				
RR08	R2BSUJ223A	CARBON 22K 1/8WJ	1				
RR09	R2BSUJ223A	CARBON 22K 1/8WJ	1				
RR10	R2BSUJ152A	CARBON 1.5K 1/8WJ	1				
RR11	R2BSUJ101A	CARBON 100 1/8WJ	1				
RR12	R2BSUJ124A	CARBON 120K 1/8WJ	1				
RR13	R2BSUJ103A	CARBON 10K 1/8WJ	1				
RR14	R2BSUJ223A	CARBON 22K 1/8WJ	1				
RR15	R2BSUJ221A	CARBON 220 1/8WJ	1				
RR16	R2BSUJ182A	CARBON 1.8K 1/8WJ	1				
RR17	R2BSUJ334A	CARBON 330K 1/8WJ	1				
RR18	R2BSUJ471A	CARBON 470 1/8WJ	1				
RR19	R2BSUJ102A	CARBON 1K 1/8WJ	1				
RR20	R2BSUJ102A	CARBON 1K 1/8WJ	1				
RR21	R2BSUJ472A	CARBON 4.7K 1/8WJ	1				
RR22	R2BSUJ472A	CARBON 4.7K 1/8WJ	1				
RR23	R2BSUJ563A	CARBON 56K 1/8WJ	1				
RR24	R2BSUJ334A	CARBON 330K 1/8WJ	1				
RR25	R2BSUJ100A	CARBON 10 1/8WJ	1				
RR26	R2BSUJ470A	CARBON 47 1/8WJ	1				
RR27	R2BSUJ124A	CARBON 120K 1/8WJ	1				
RR28	R2BSUJ223A	CARBON 22K 1/8WJ	1				
RR29	R2BSUJ182A	CARBON 1.8K 1/8WJ	1				
RR30	R2BSUJ822A	CARBON 8.2K 1/8WJ	1				
RR31	R2BSUJ391A	CARBON 390 1/8WJ	1				
RR32	R2BSUJ124A	CARBON 120K 1/8WJ	1				
RR33	R2BSUJ103A	CARBON 10K 1/8WJ	1				
RR35	R2BSUJ562A	CARBON 5.6K 1/8WJ	1				
RR36	R2BSUJ273A	CARBON 27K 1/8WJ	1				
RR37	R2BSUJ222A	CARBON 2.2K 1/8WJ	1				
RR38	R2BSUJ472A	CARBON 4.7K 1/8WJ	1				
RR39	R2BSPJ102A	CARBON 1K 1/8WJ	1				
RR40	R2BSPJ105A	CARBON 1M 1/8WJ	1				
RR41	R2BSPJ274A	CARBON 270K 1/8WJ	1				

4 2311 10870 Purch T113 S.E.

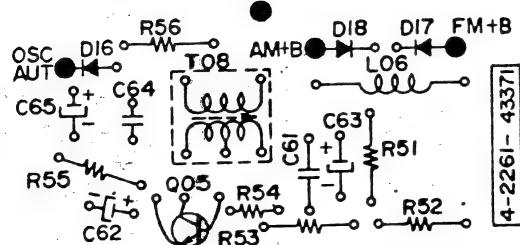
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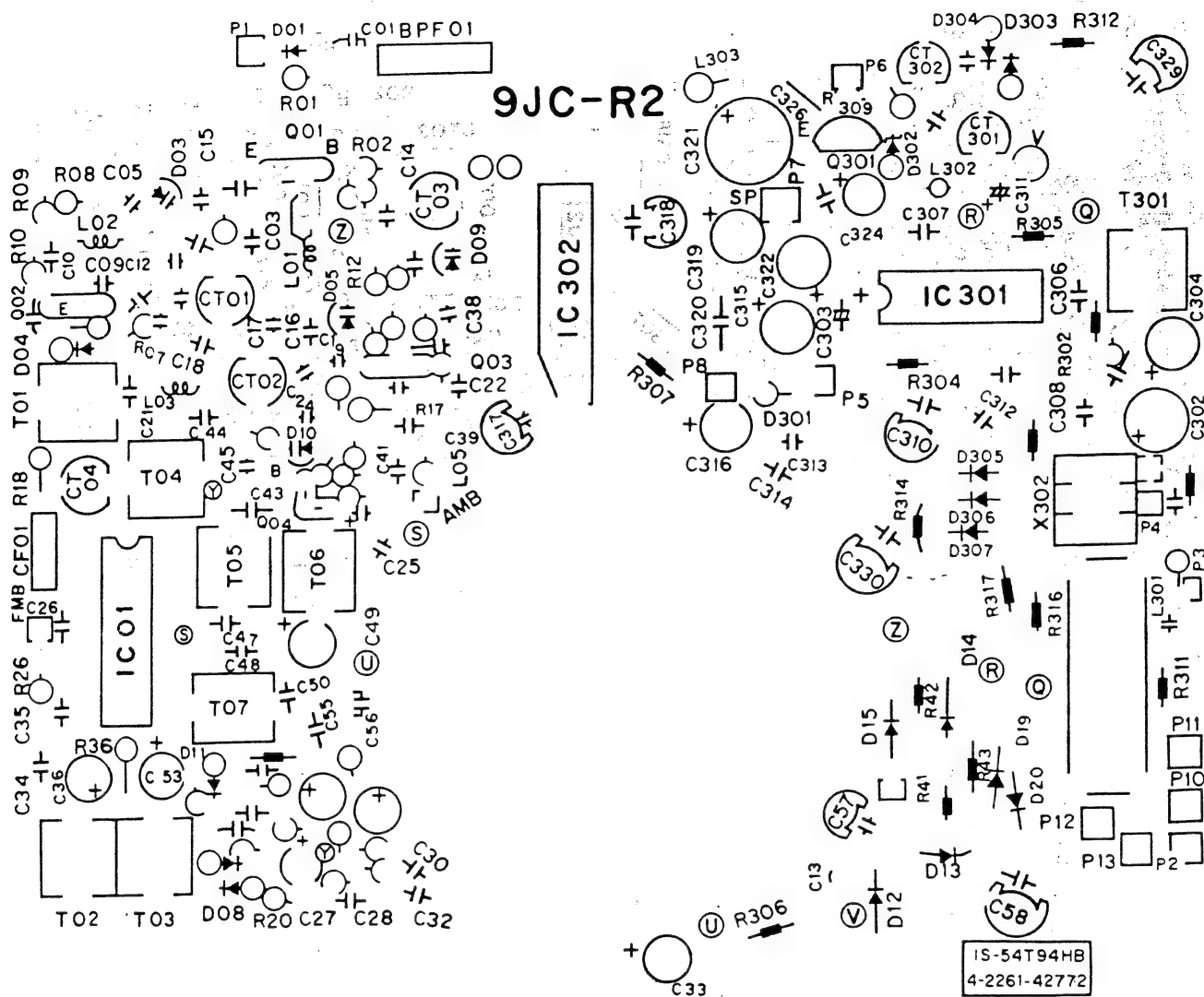
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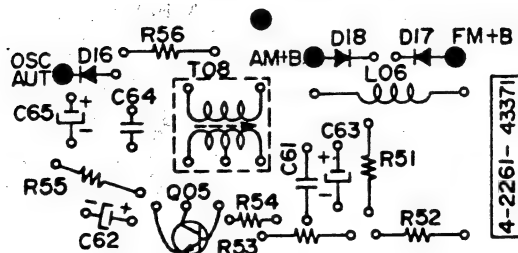
OSC BLOCK P.C.B.



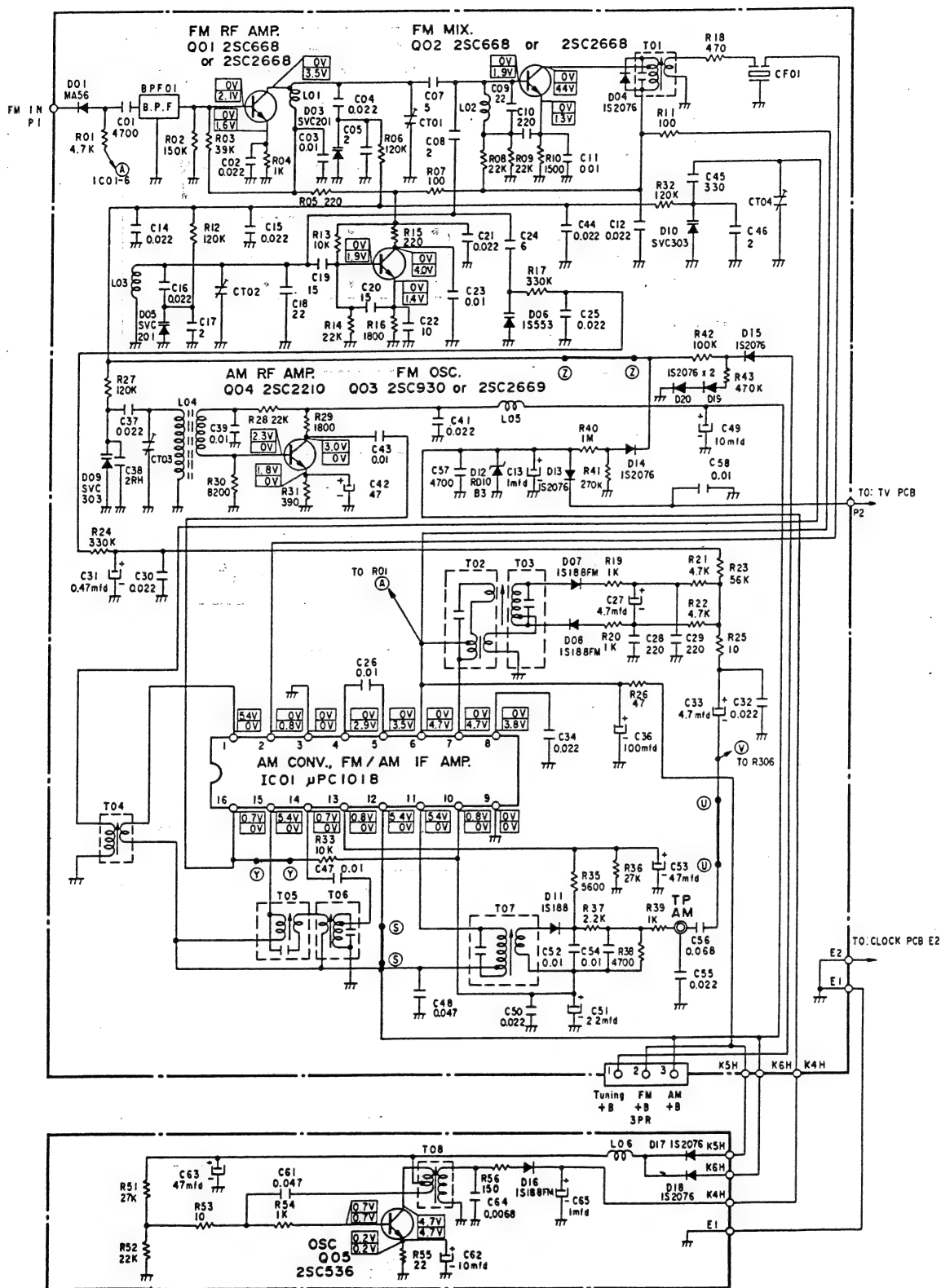
# CIRCUIT BOARD DIAGRAM (RADIO)



## OSC BLOCK P.C.B.

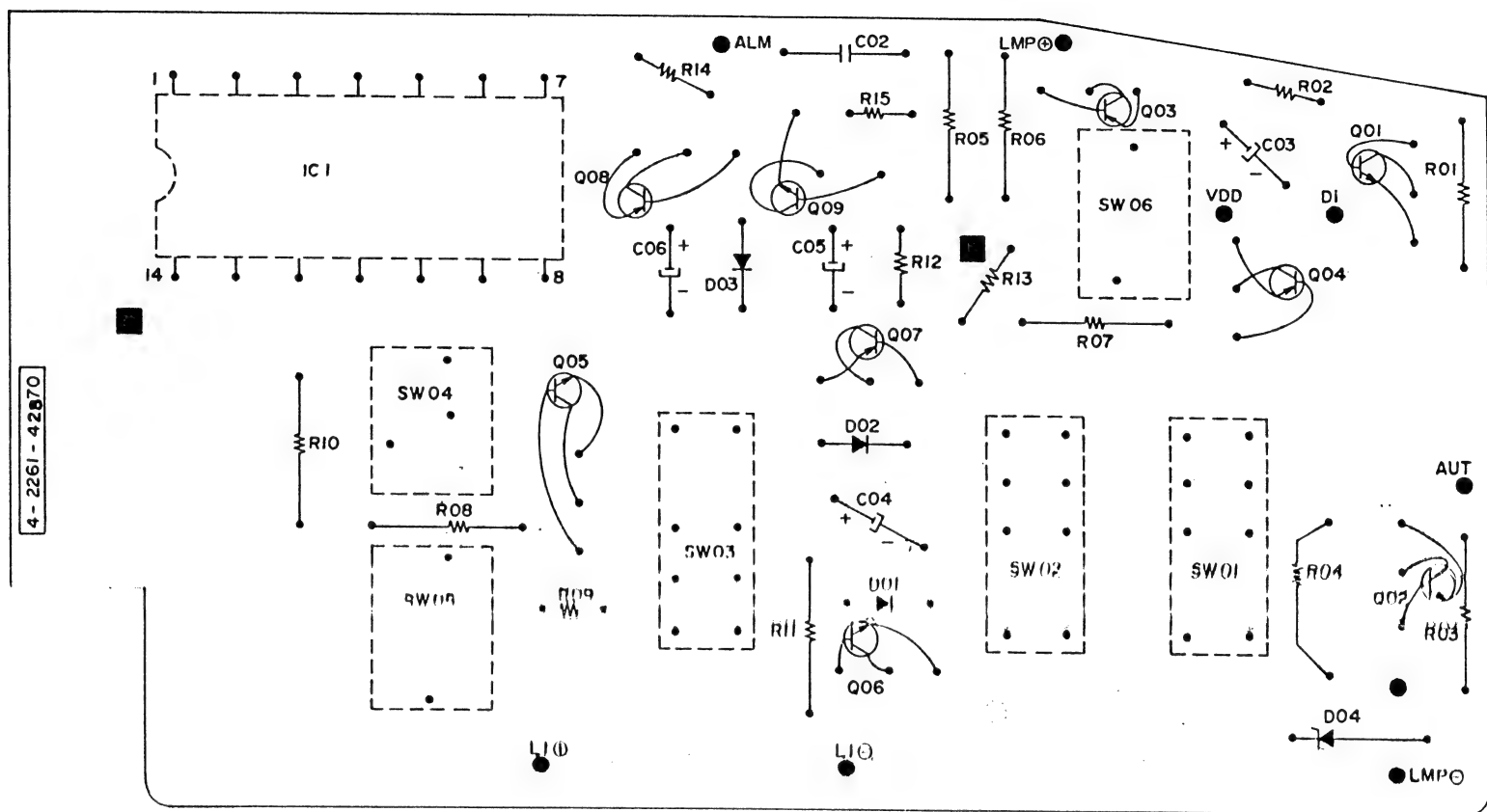


# SCHEMATIC DIAGRAM (RADIO)



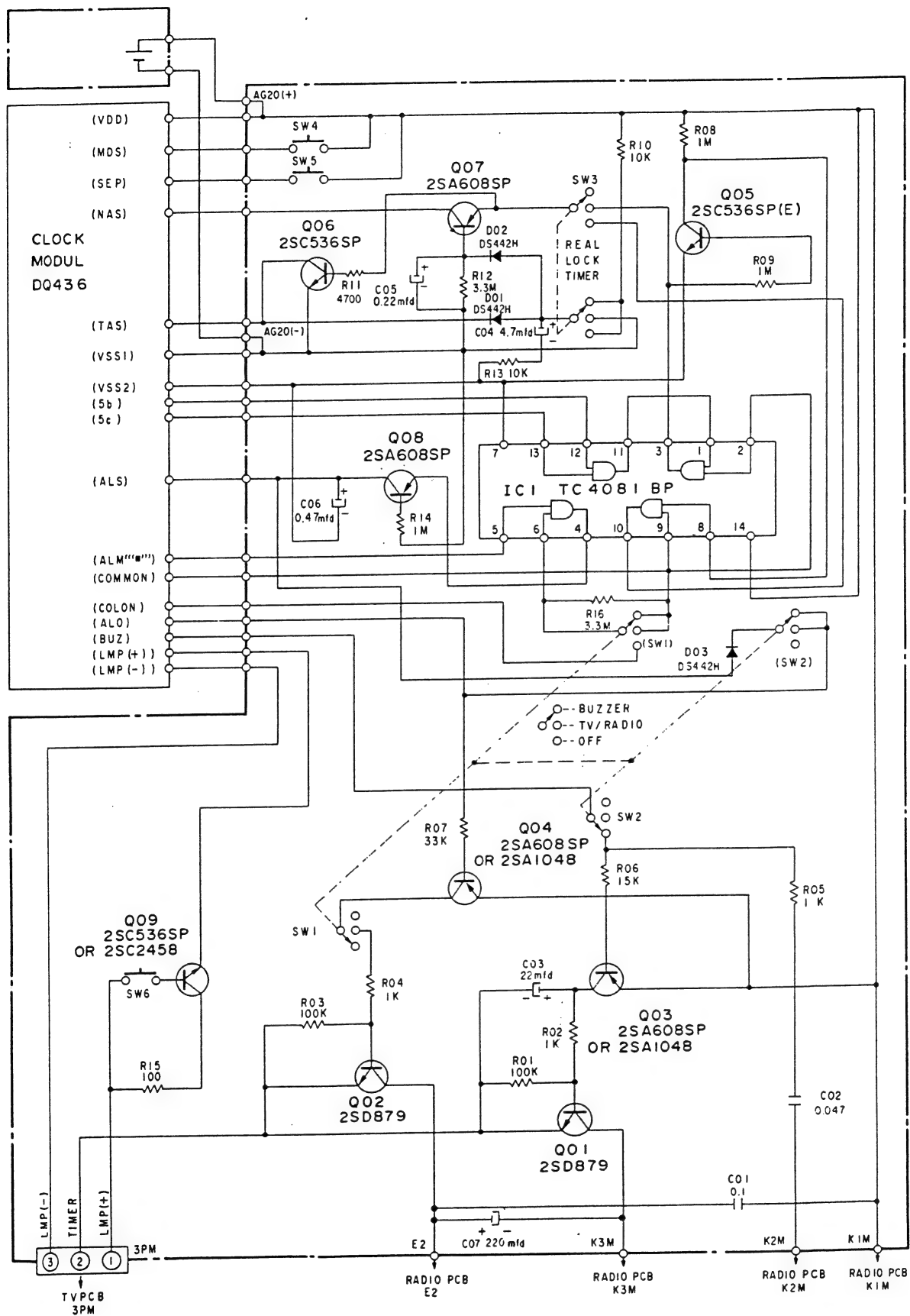
## NOTE

- AM voltage reading
- FM voltage reading

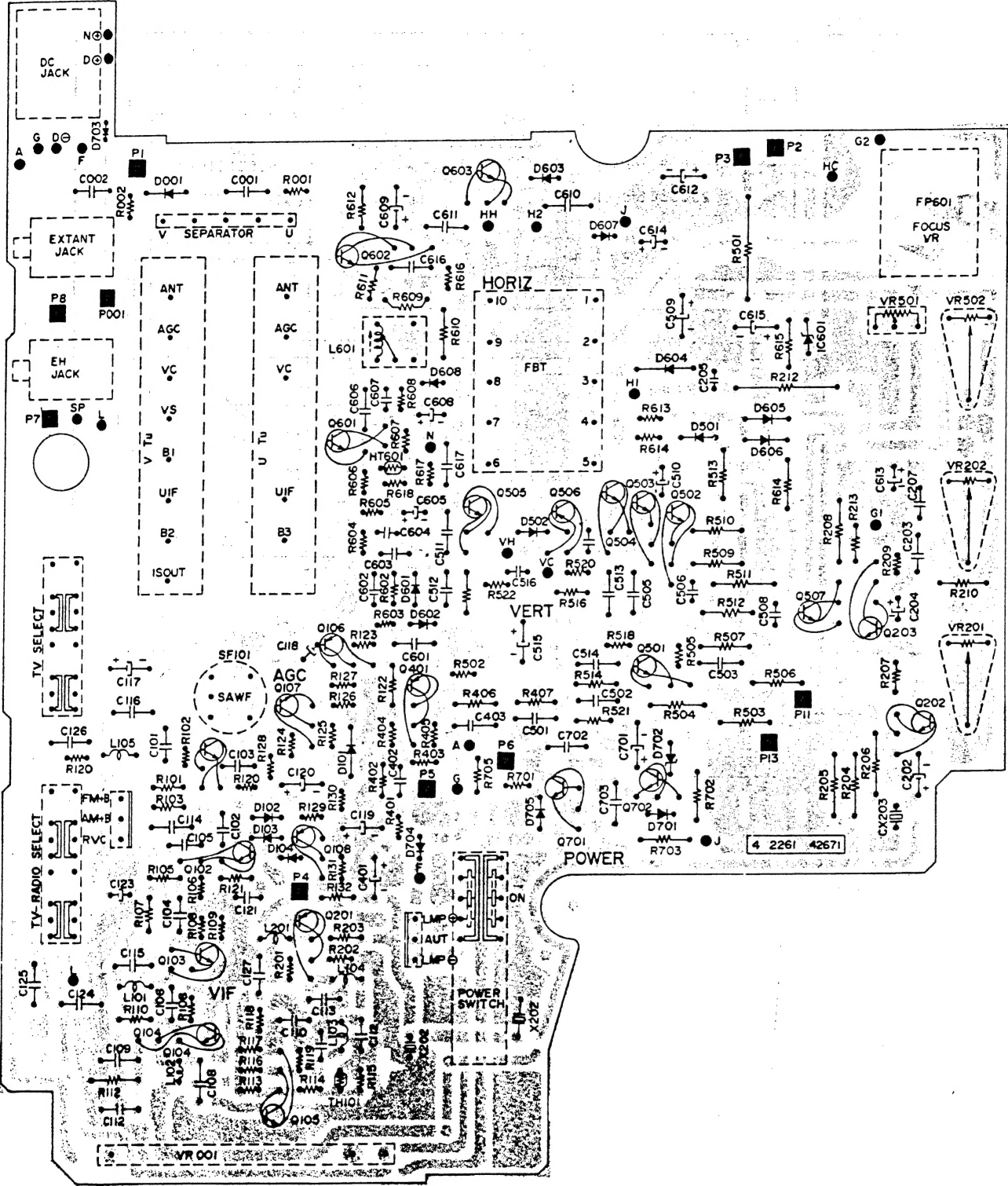


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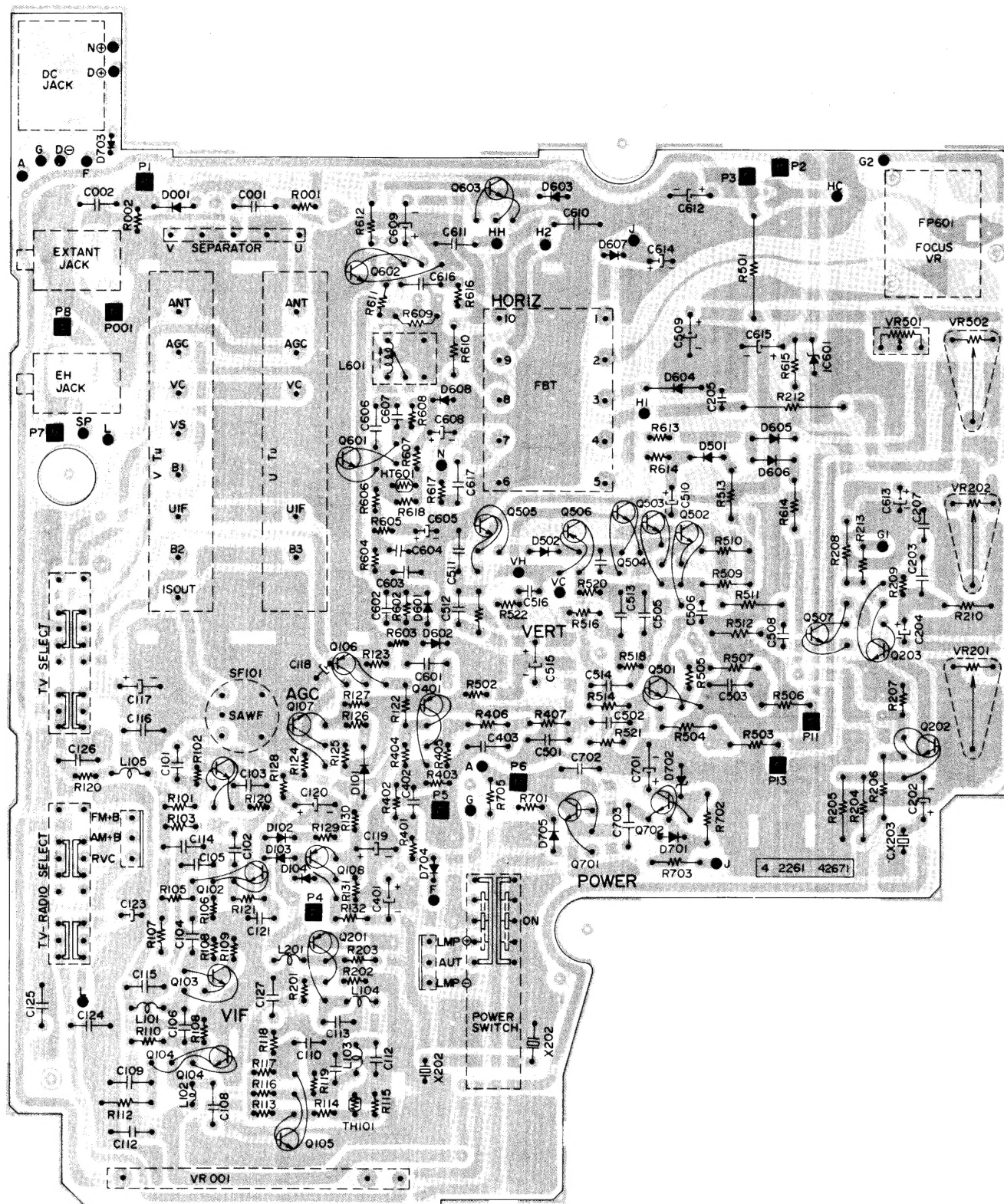
# SCHEMATIC DIAGRAM (CLOCK)



CIRCUIT BOARD DIAGRAM (TV)



# CIRCUIT BOARD DIAGRAM (TV)

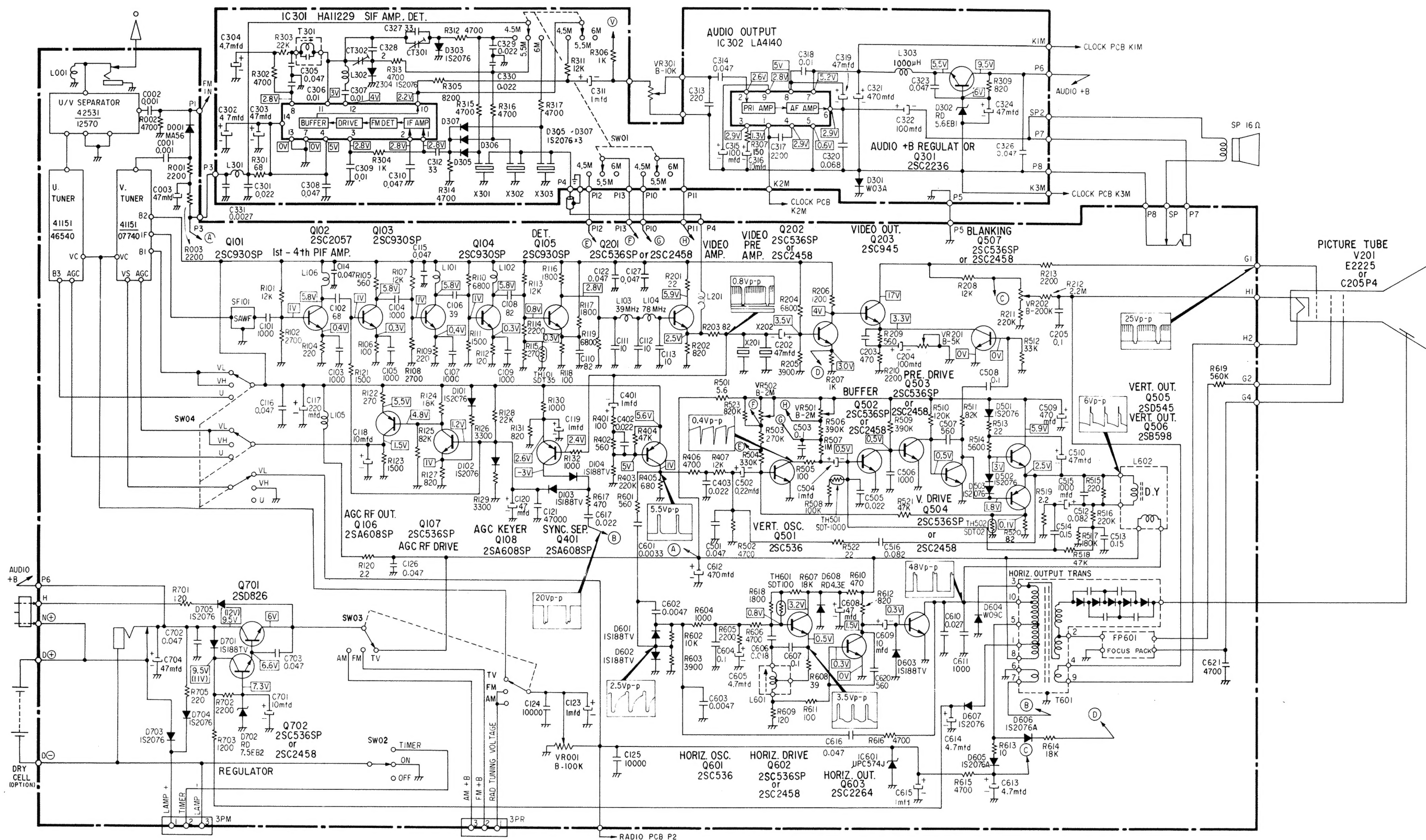




NOTES:

1. All resistance values in ohm.  
K = 1,000 M = 1,000,000
2. Unless otherwise noted in schematic diagram, all capacitors less than 1 are expressed in mfd, and the values larger than 1 are in pF.
3. Voltage reading taken with "VTVM" from point indicated to chassis ground, tuner on unused channel, contrast at max., other controls at normal, local line voltage.

4. All waveforms measured with strong signal input, contrast set to give normal picture.
5. Voltage reading may vary  $\pm 20\%$ .
6. This is a fundamental circuit diagram. Some production changes may be made without revision of the diagram.





# MODIFICATION NOTICE

B/W TELEVISION



TPM 2100 (USA)      TPM 2170 (KUW)  
 TPM 2100 (CANADA)      TPM 2180 (UK)  
 TPM 2140 (EUROPE)

Date May 6, 1980 Issued by \_\_\_\_\_

The following corrections should be made in the SERVICE MANUALS and PARTS (PRICE) LIST.

		Section	Key No.	Part No.	Description	Q'ty	Remark	Reason
1	From		RD03 RD05	4-2021-20370	Varactor Diode SVC201	2		E
	To		"	"	Varactor Diode SVC201Y -BB	1 pair		
2	From		RD09 RD10	4-2021-20470	Varactor Diode SVC303	2		E
	To		"	"	Varactor Diode SVC303Y -BU	1 pair		
3	From							
	To							

When replacing the aforementioned varactor diodes, use diode from a same bag to ensure matched groups and do not mix diode from different bags.

INTERCHANGEABLE	NOT INTERCHANGEABLE	Serial No. Chassis No.	Effective from
Q'ty of initial production before modification.		Identification of modified unit.	
REASON FOR MODIFICATION A ..... Standardization      C ..... Improvement of reliability      E ..... Miss print      G ..... B ..... Change of materials      D ..... Improvement of performance      F ..... Miss register			

Printed in Japan 12000

SANYO ELECTRIC TRADING CO., LTD.  
 OSAKA, JAPAN

WM- 5040